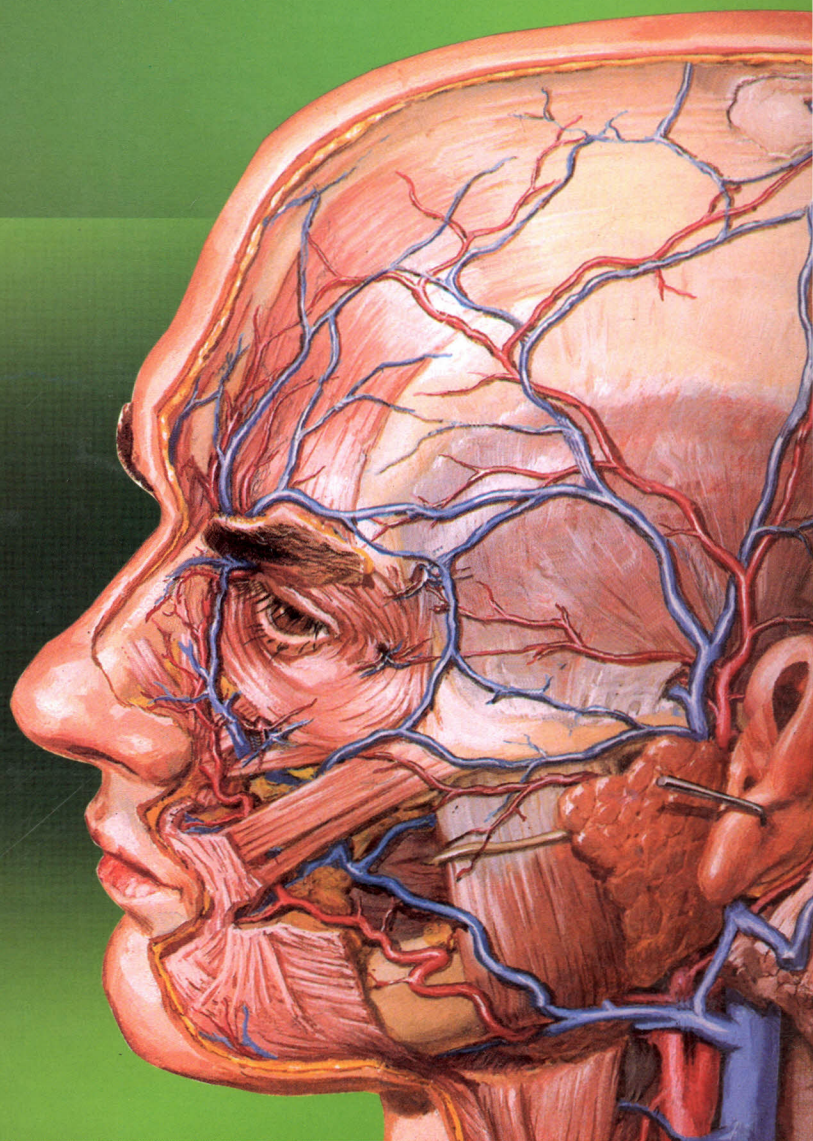


El-Fiky's

MINI ATLAS OF
ANATOMY
PART V

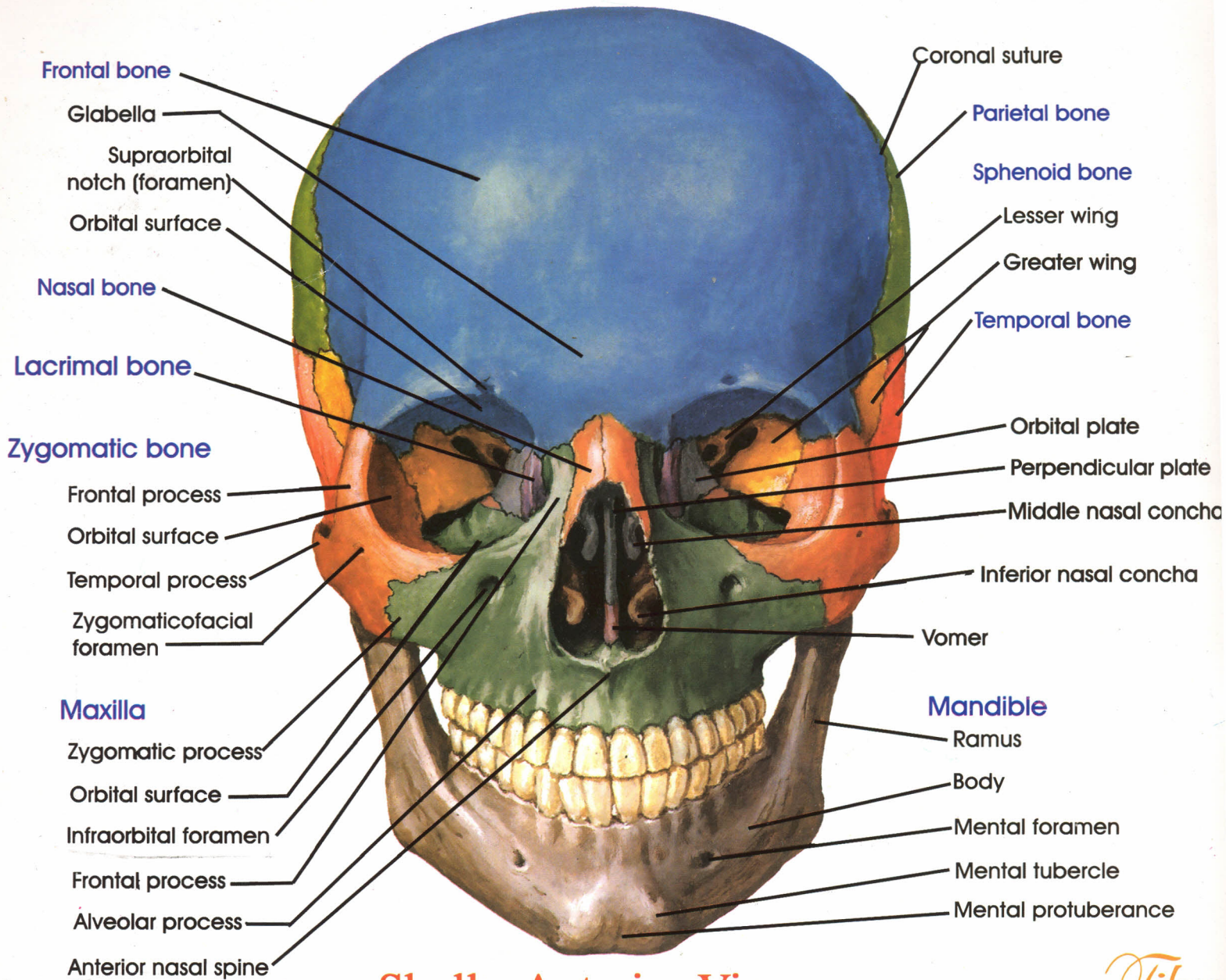
HEAD & NECK



DR. MOHAMED EL-FIKY

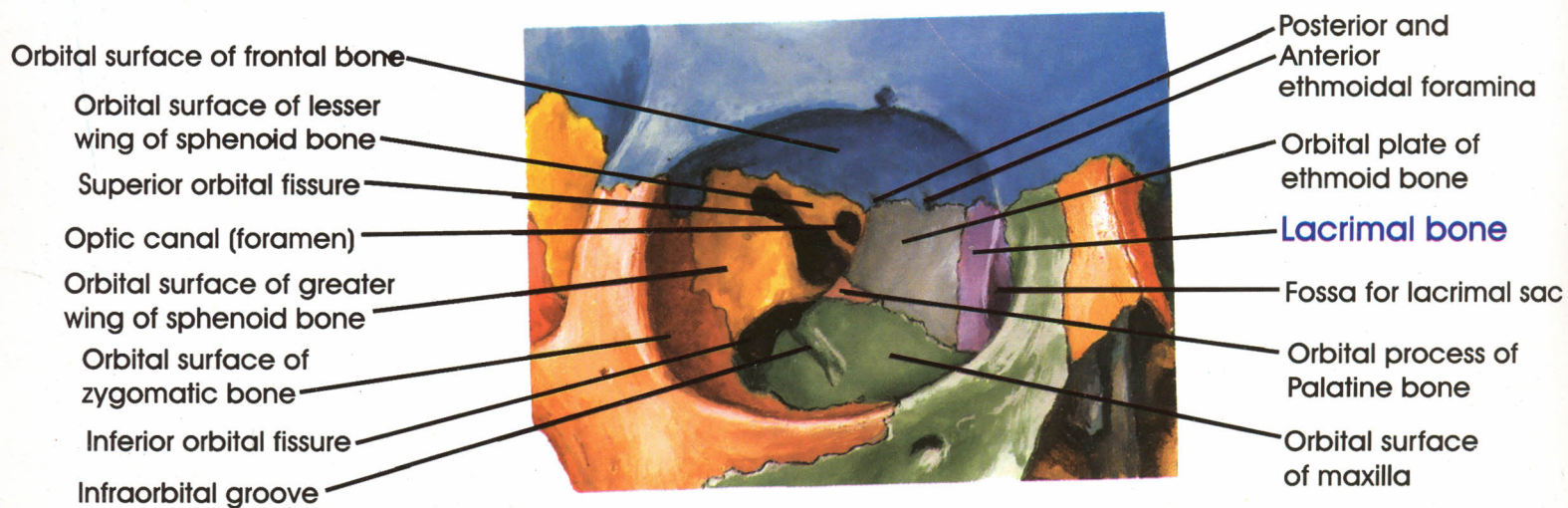
Assist.Prof. of Anatomy & Embryology
Faculty of Medicine Menoufia university

EGYPT

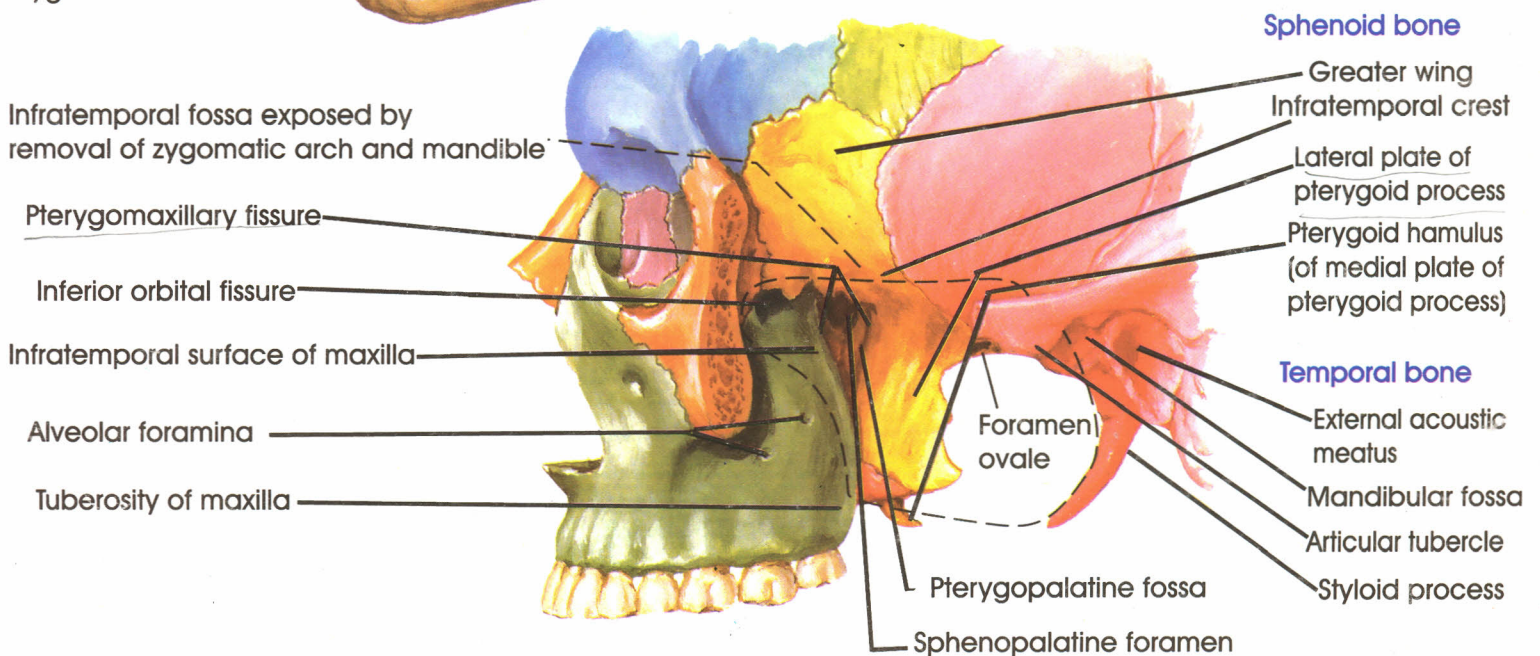
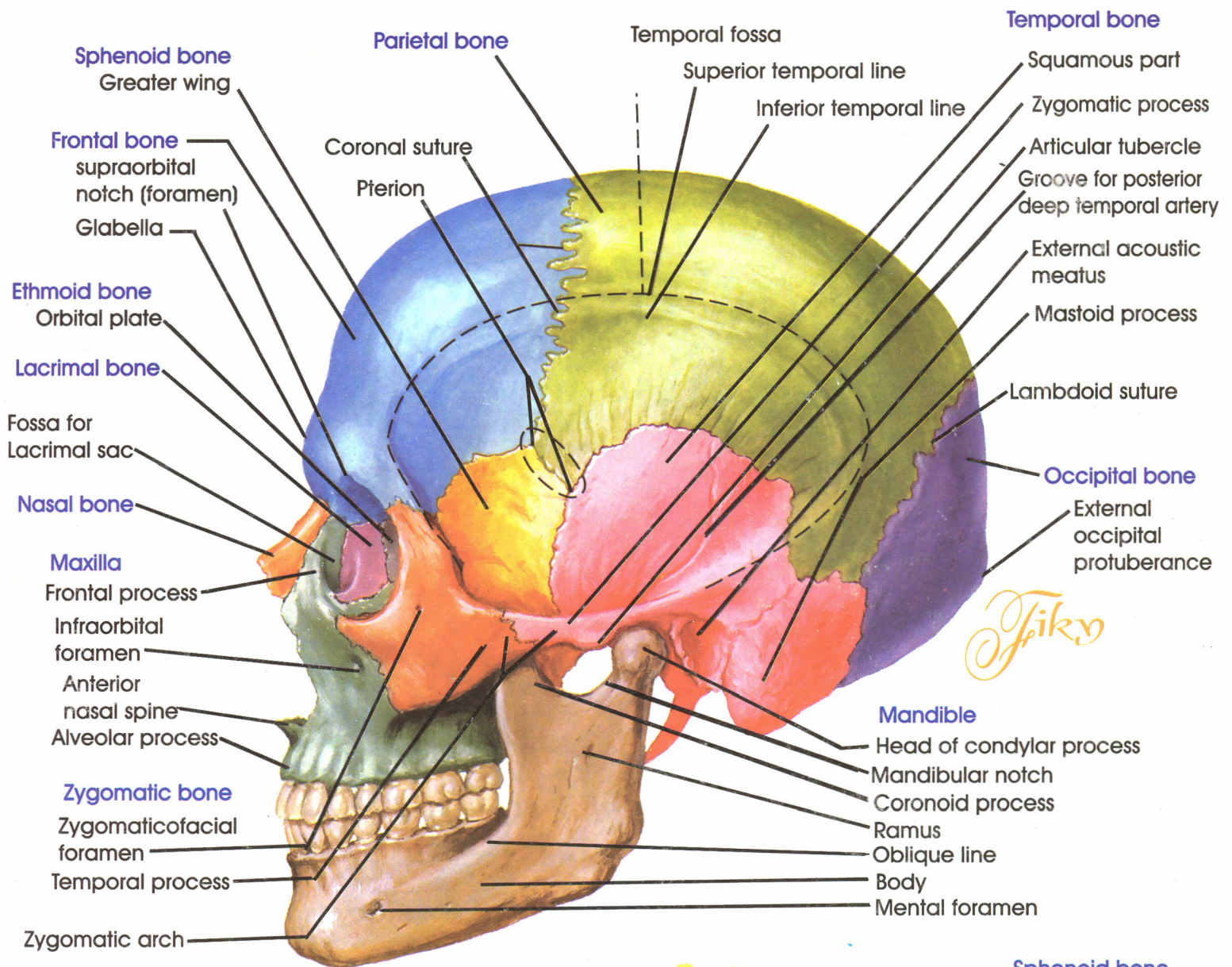


Skull - Anterior View

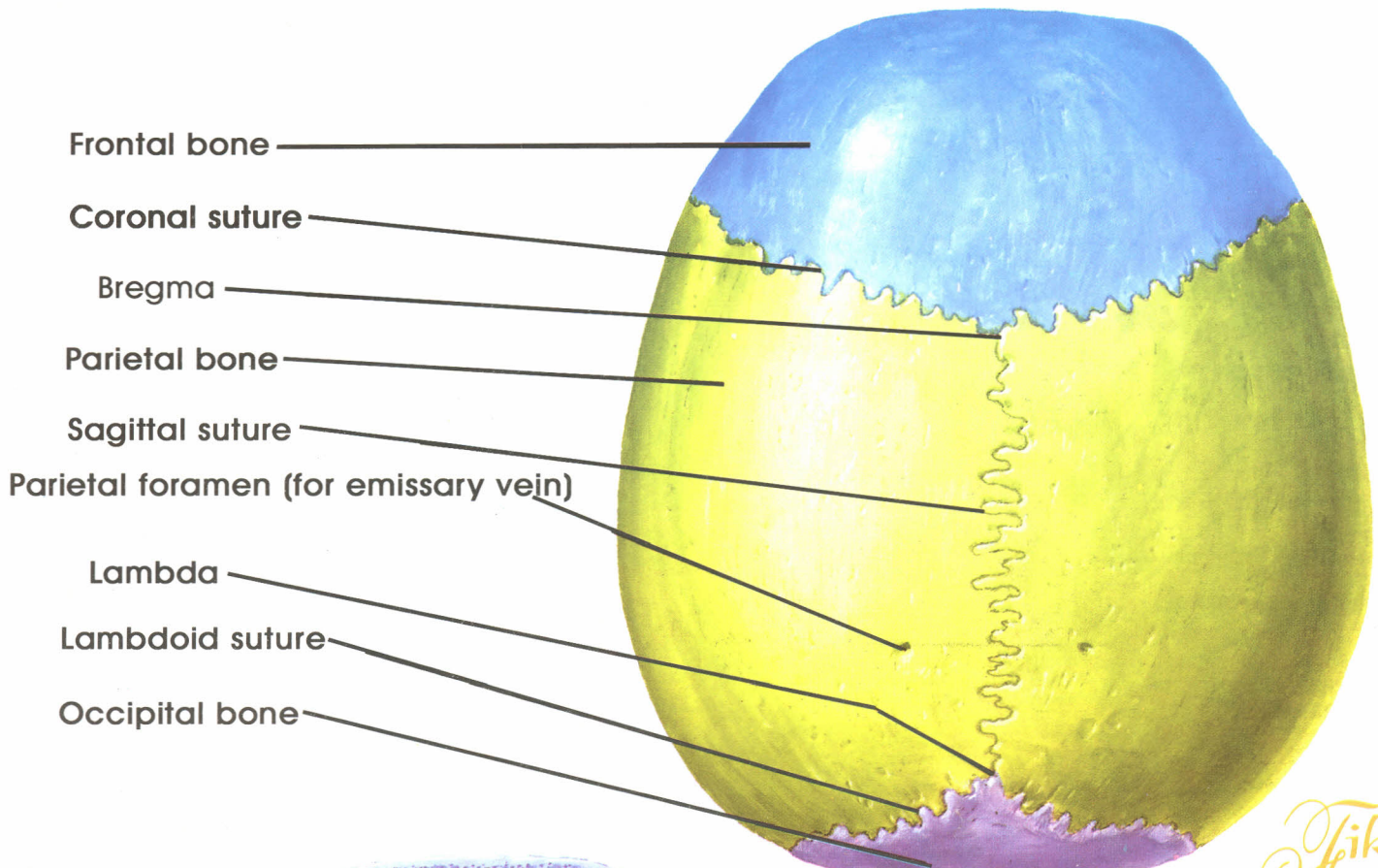
Spiky



Right Orbit - Frontal and slightly Lateral View

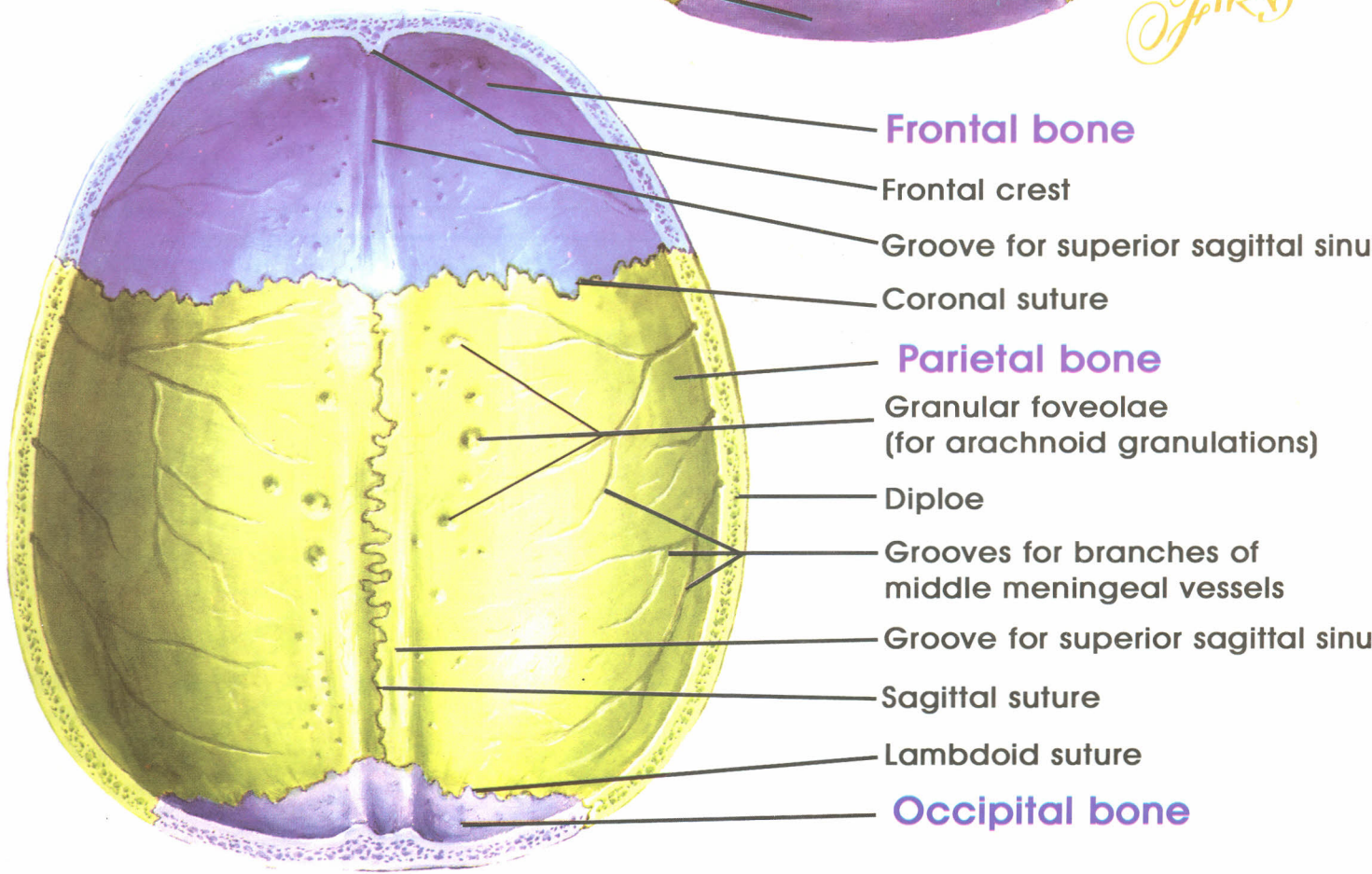


Skull - Lateral View



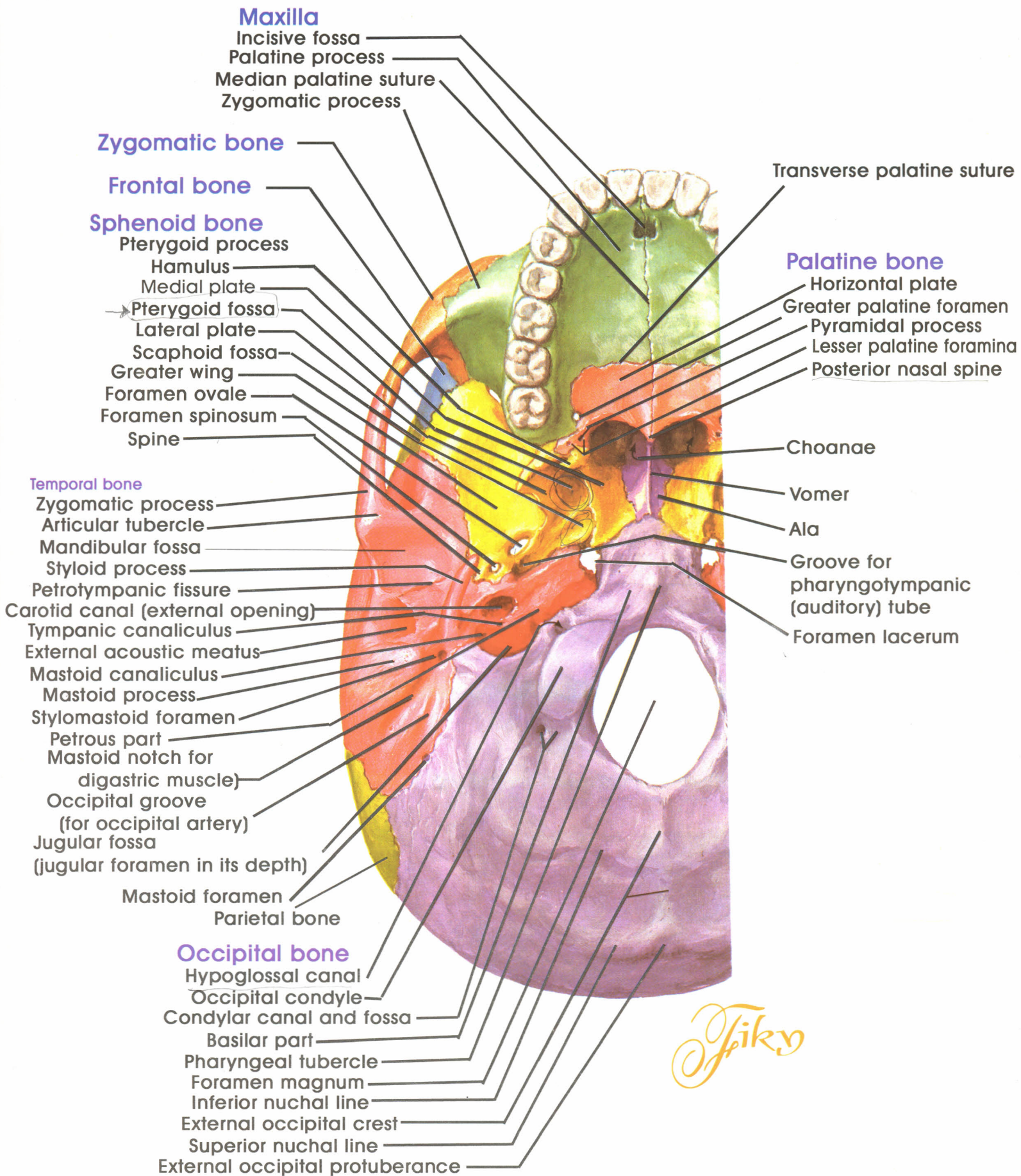
- Frontal bone
- Coronal suture
- Bregma
- Parietal bone
- Sagittal suture
- Parietal foramen (for emissary vein)
- Lambda
- Lambdoid suture
- Occipital bone

Spiky



- Frontal bone
- Frontal crest
- Groove for superior sagittal sinus
- Coronal suture
- Parietal bone
- Granular foveolae (for arachnoid granulations)
- Diploë
- Grooves for branches of middle meningeal vessels
- Groove for superior sagittal sinus
- Sagittal suture
- Lambdoid suture
- Occipital bone

Calvaria (skull cap)



➤ Cranial base - Inferior View

Frontal bone
 Groove for superior sagittal sinus
 Frontal crest
 Groove for anterior meningeal vessels
 Foramen cecum
 Superior surface of orbital part

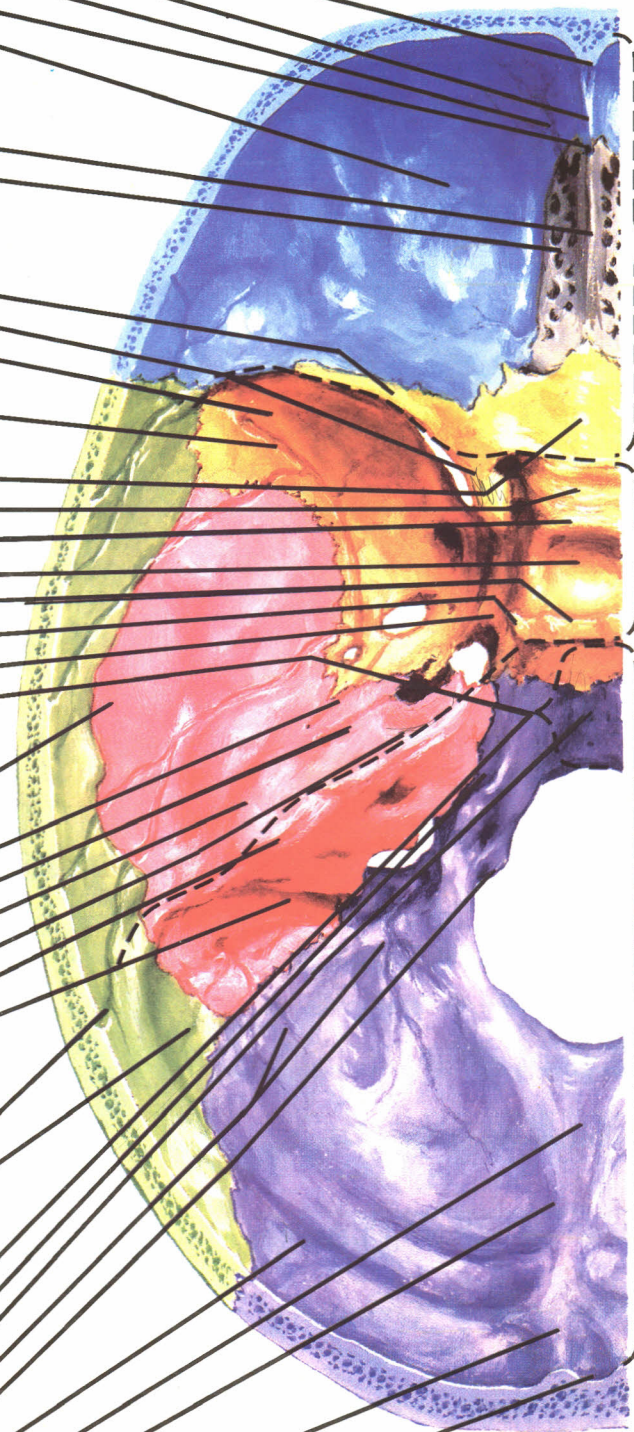
Ethmoid bone
 Crista galli
 Cribriform plate

Sphenoid bone
 Lesser wing
 Anterior clinoid process
 Greater wing
 Groove for middle meningeal Vessels (frontal branches)
 Body
 Jugum
 Prechiasmatic groove
 Sella {
 Tuberculum sellae
 Hypophyseal fossa
 Dorsum sellae
 Posterior clinoid process
 }
 Carotid groove (for int. carotid a.)
 Clivus

Temporal bone
 Squamous part
 Petrous part
 Groove for lesser petrosal nerve
 Groove for greater petrosal nerve
 Arcuate eminence
 Trigeminal impression
 Groove for superior petrosal sinus
 Groove for sigmoid sinus

Parietal bone
 Groove for middle meningeal Vessels (parietal branches)
 Mastoid angle

Occipital bone
 Clivus
 Groove for inferior petrosal sinus
 Basilar part
 Groove for posterior meningeal vessels
 Condyle
 Groove for transverse sinus
 Groove for occipital sinus
 Internal occipital crest
 Internal occipital protuberance
 Groove for superior sagittal sinus



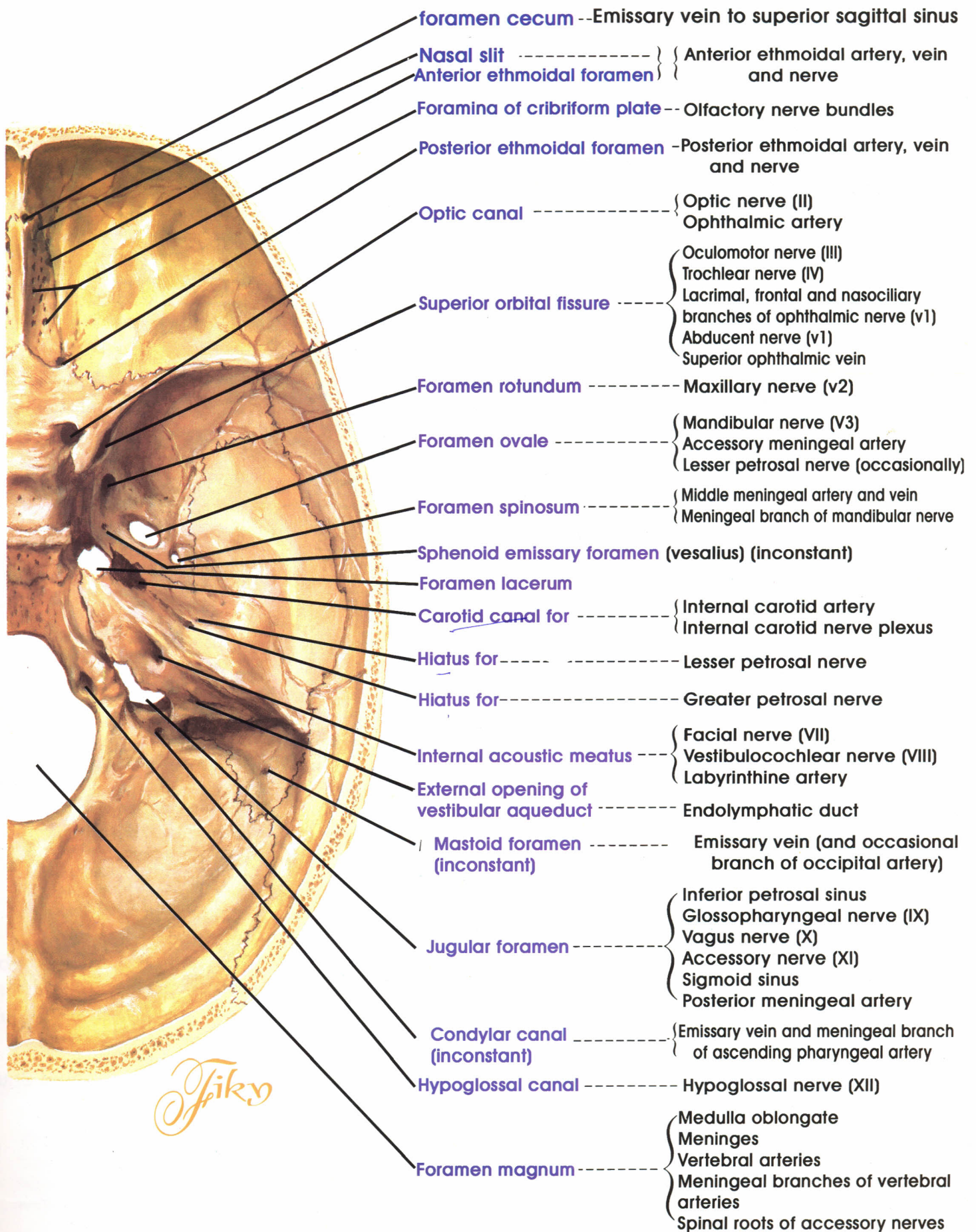
Anterior cranial fossa

Middle cranial fossa

Posterior cranial fossa

Spiky

Cranial base - Internal View

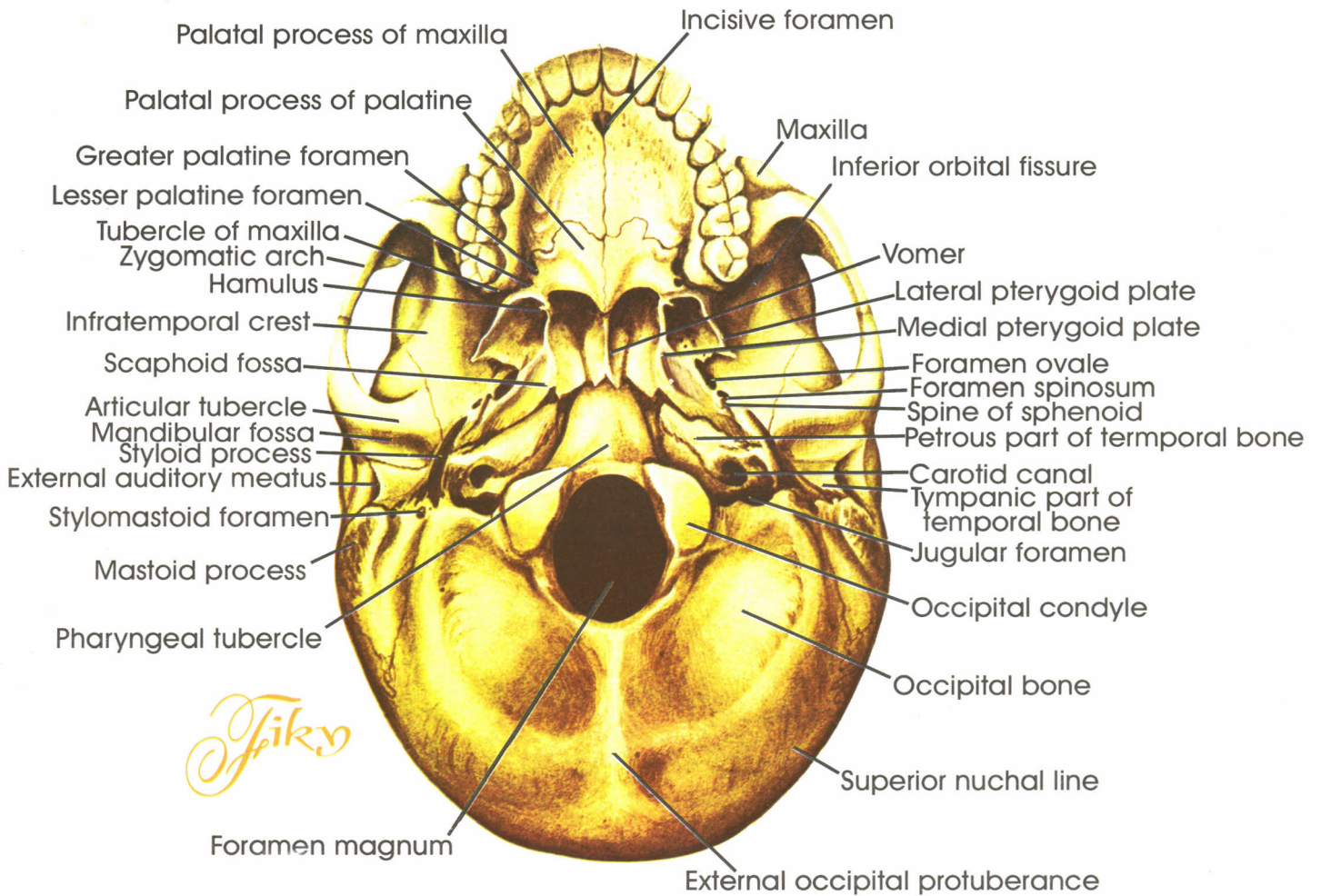


Spiky

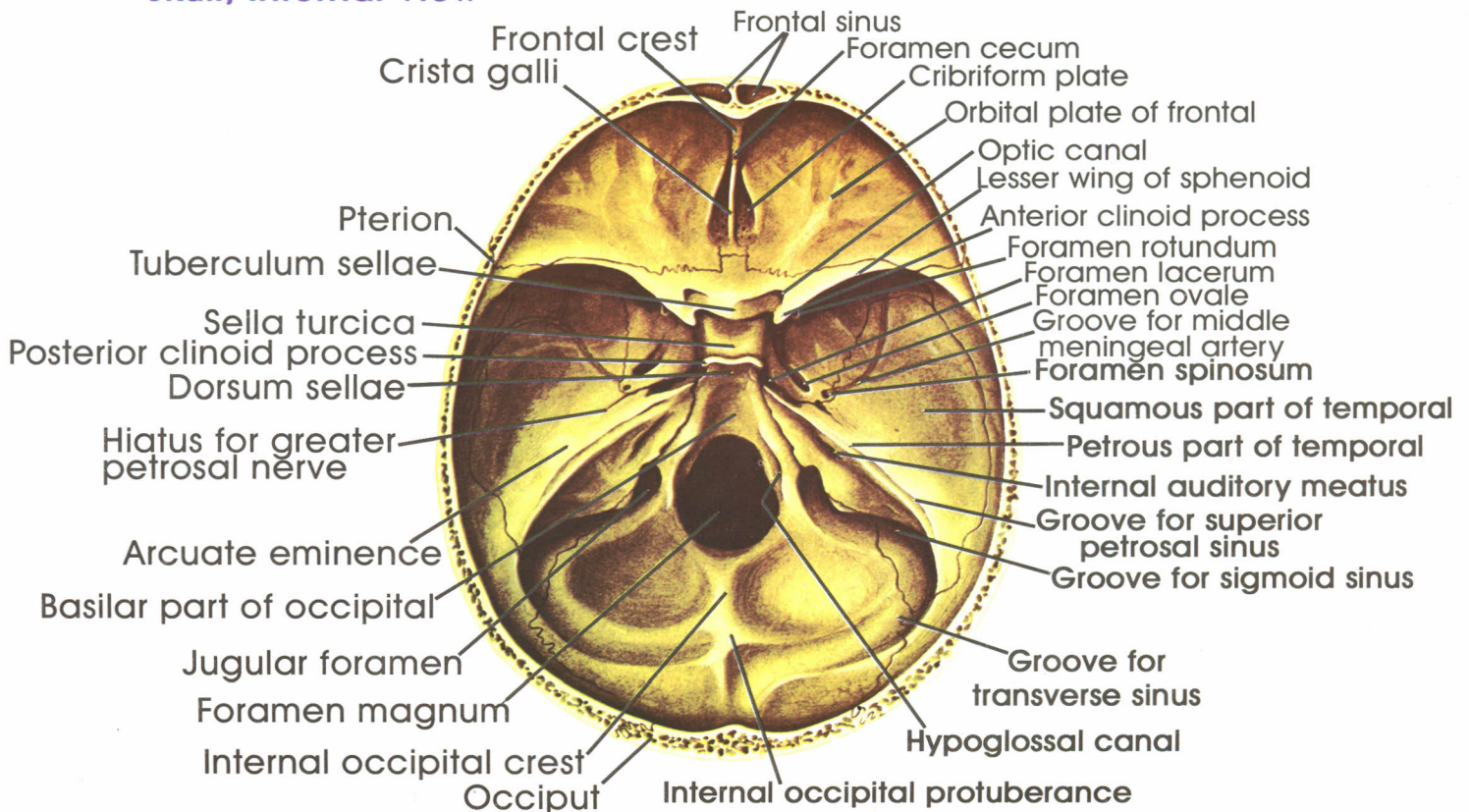
Foramina of Cranial base - Superior View



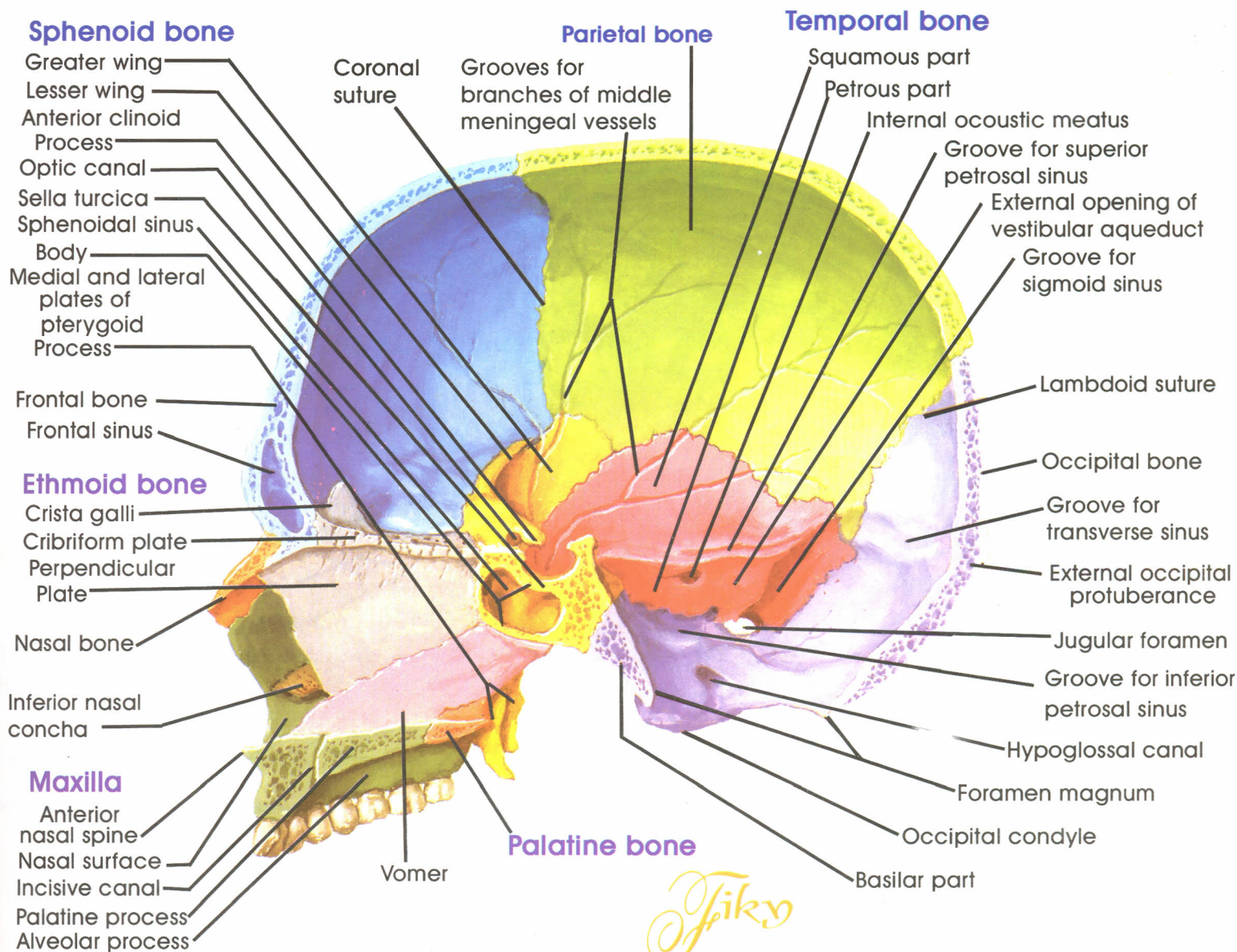
Skull, Inferior View



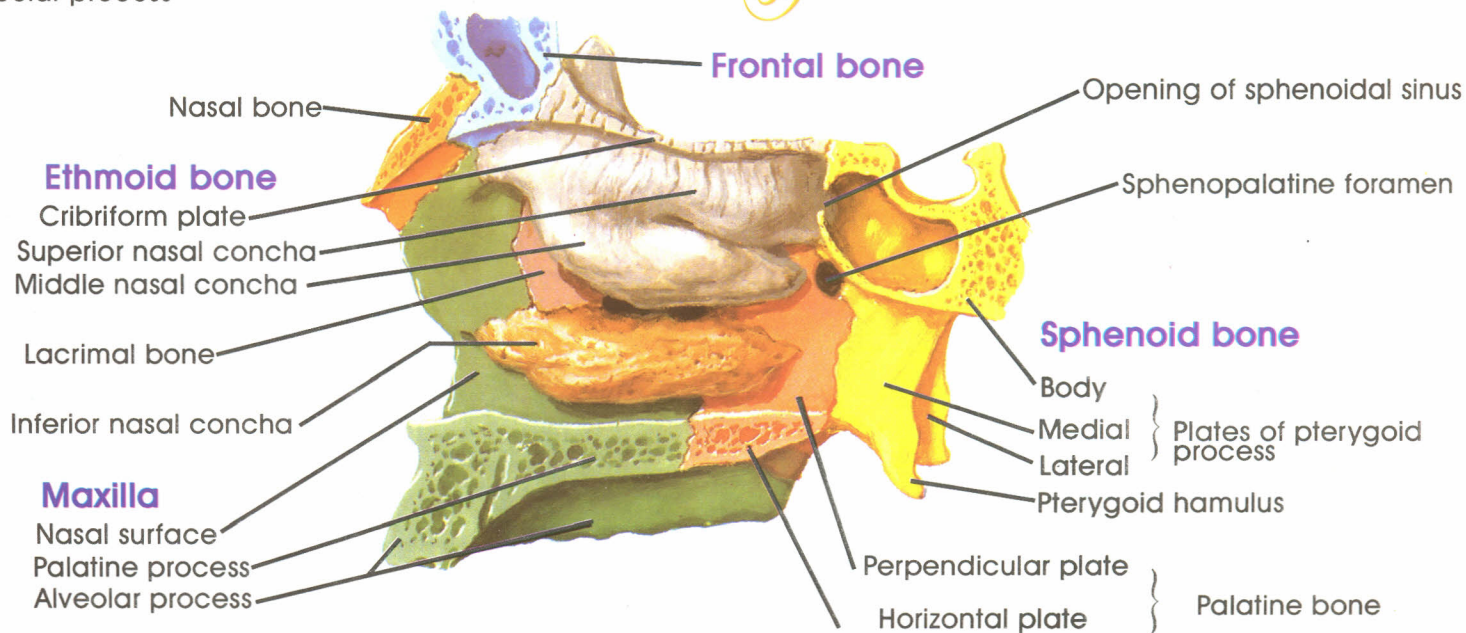
Skull, Internal View



Skull base



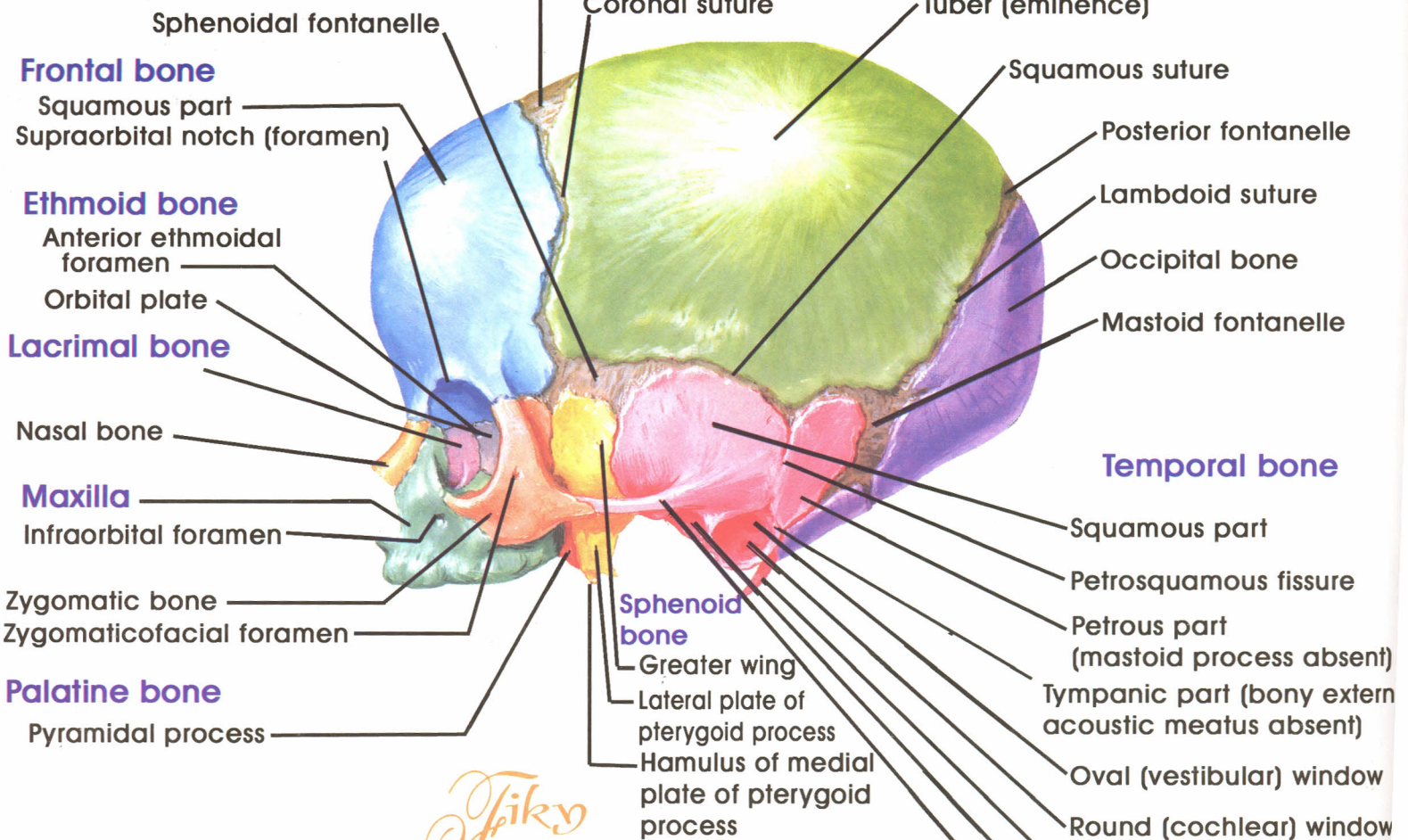
Jiky



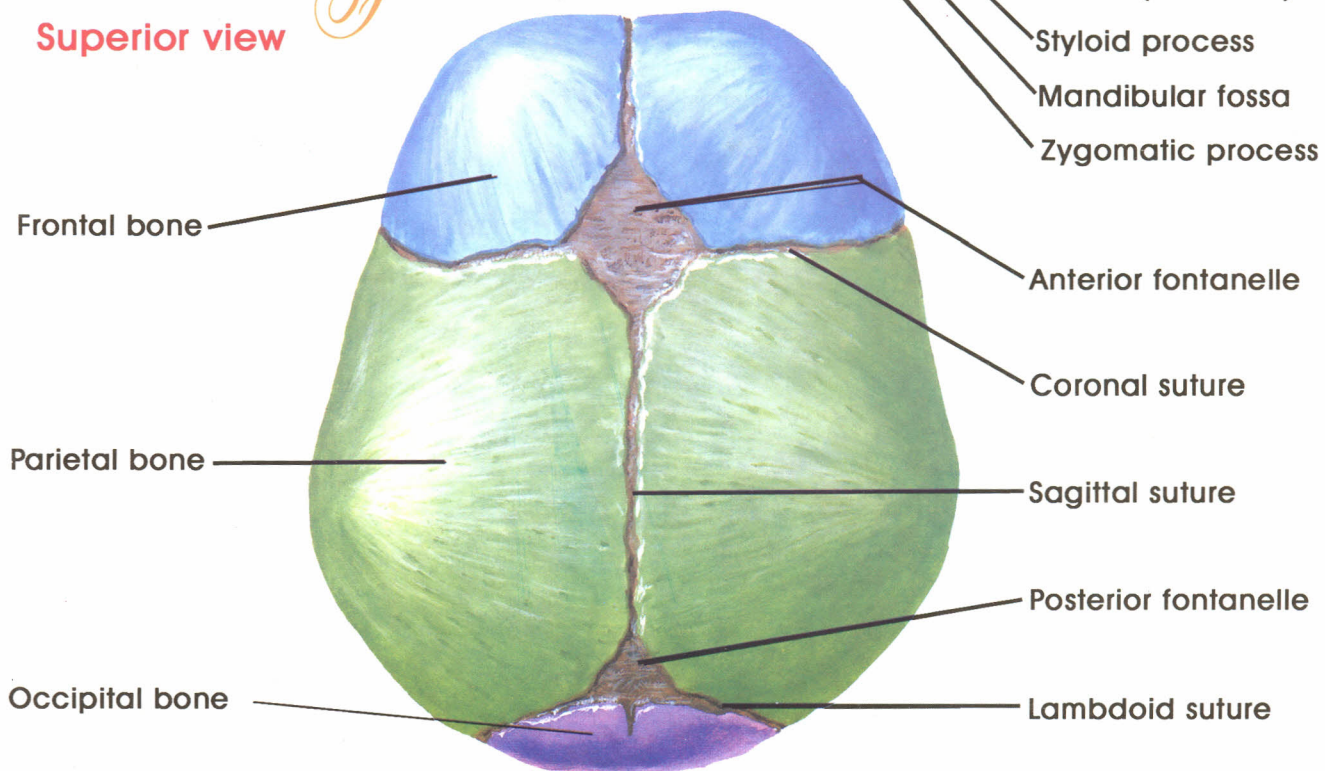
Skull - Midsagittal section

Lateral view

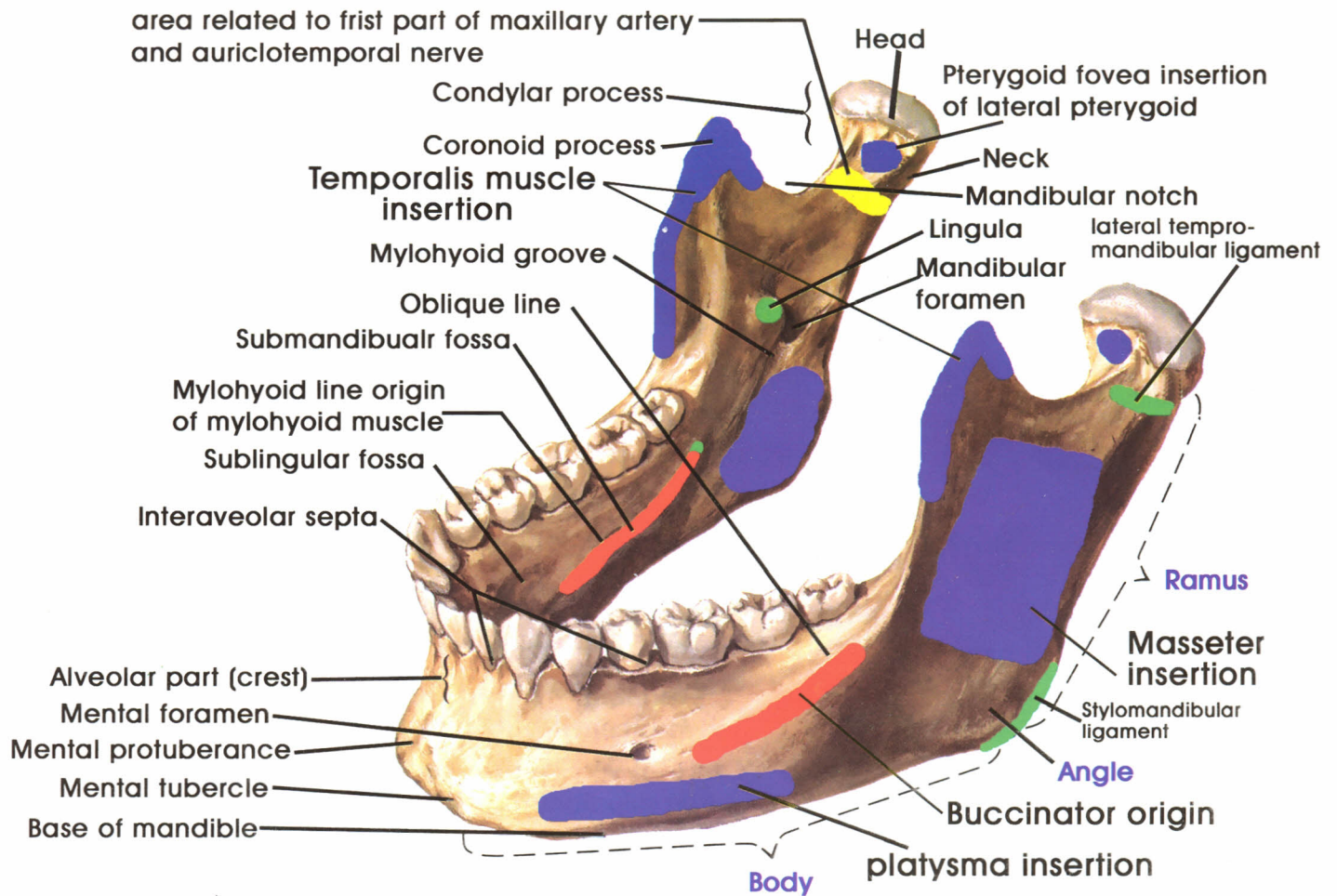
Parietal bone



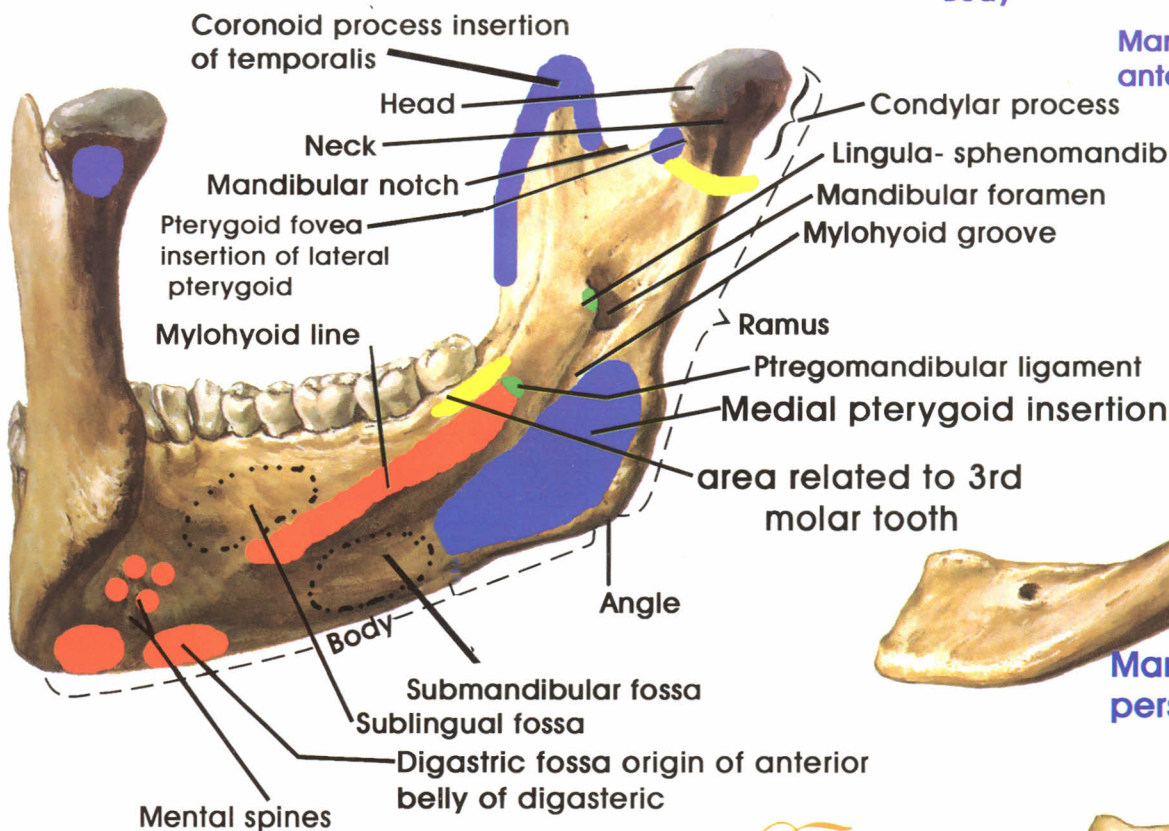
Superior view



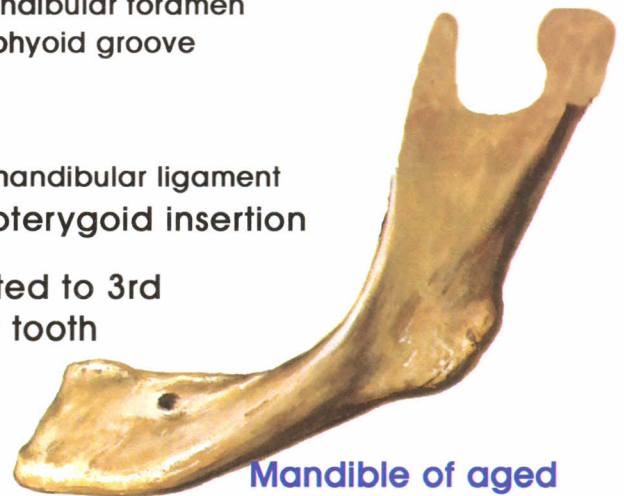
Skull of newborn



Mandible of adult: anterolateral superior view



Mandible of adult: left posterior view



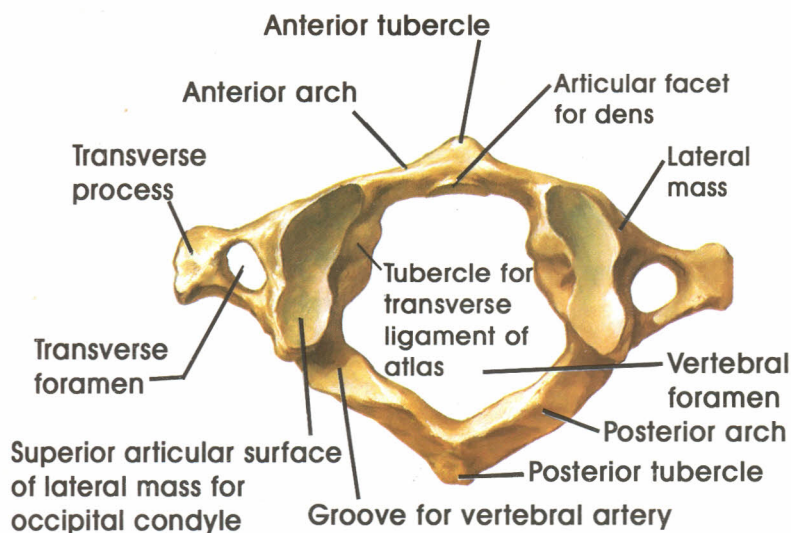
Mandible of aged person (adentulous)



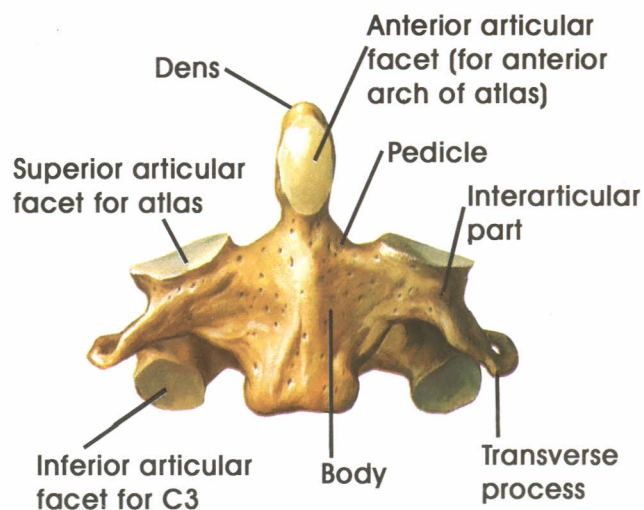
Mandible of infant

Fiky

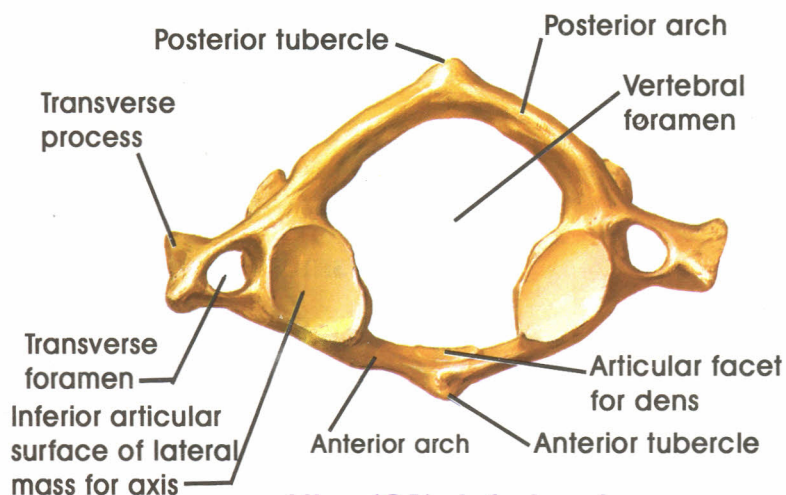
Mandible



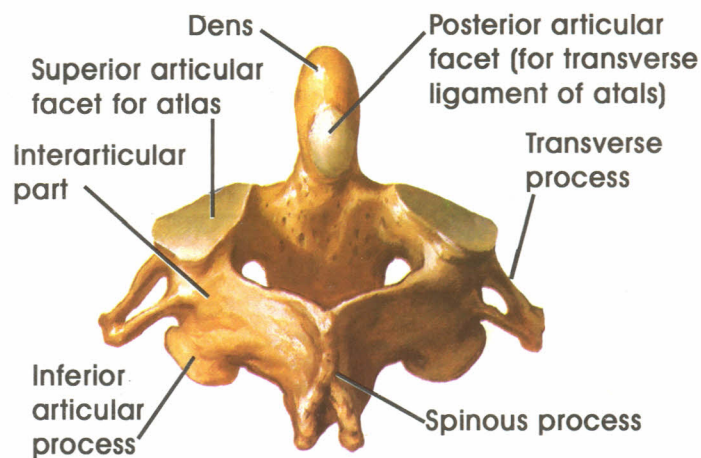
Atlas (C1): superior view



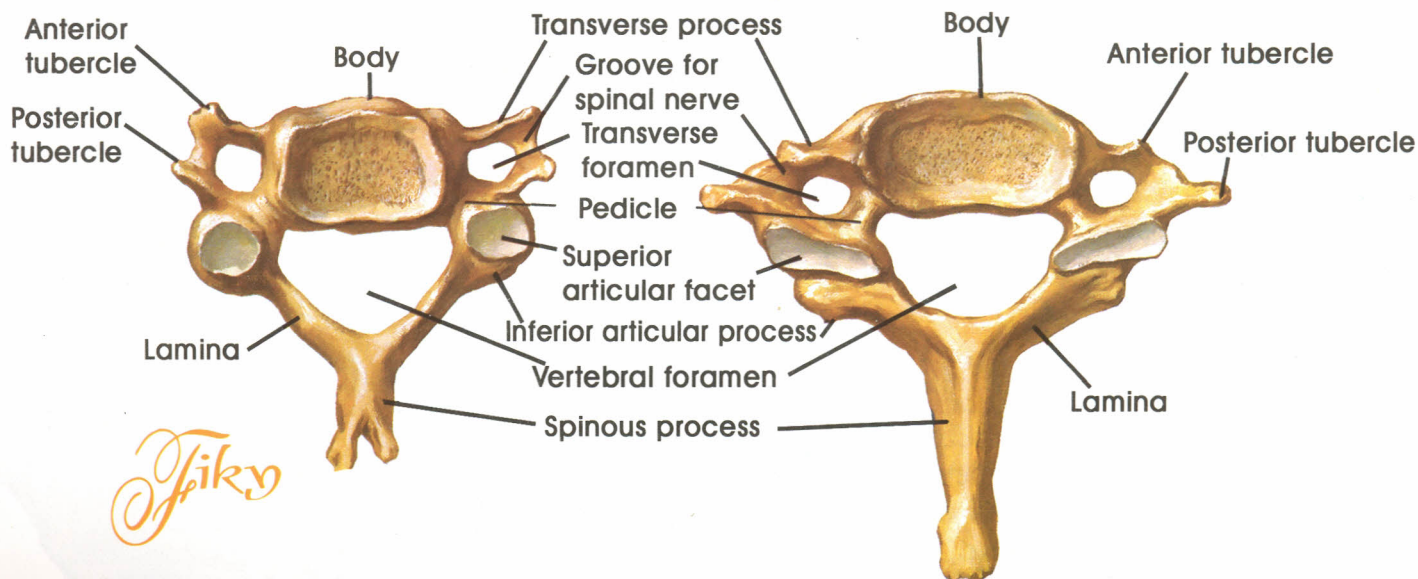
Axis (C2): anterior view



Atlas (C1): inferior view



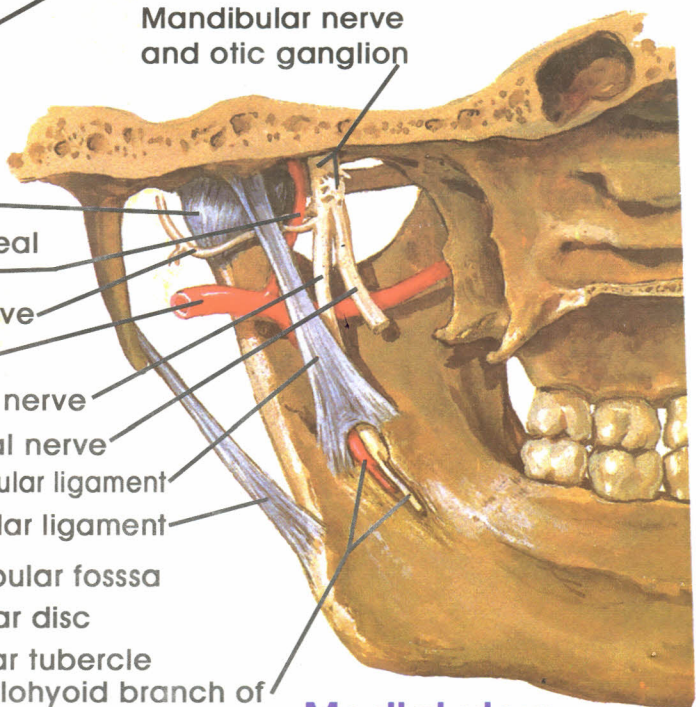
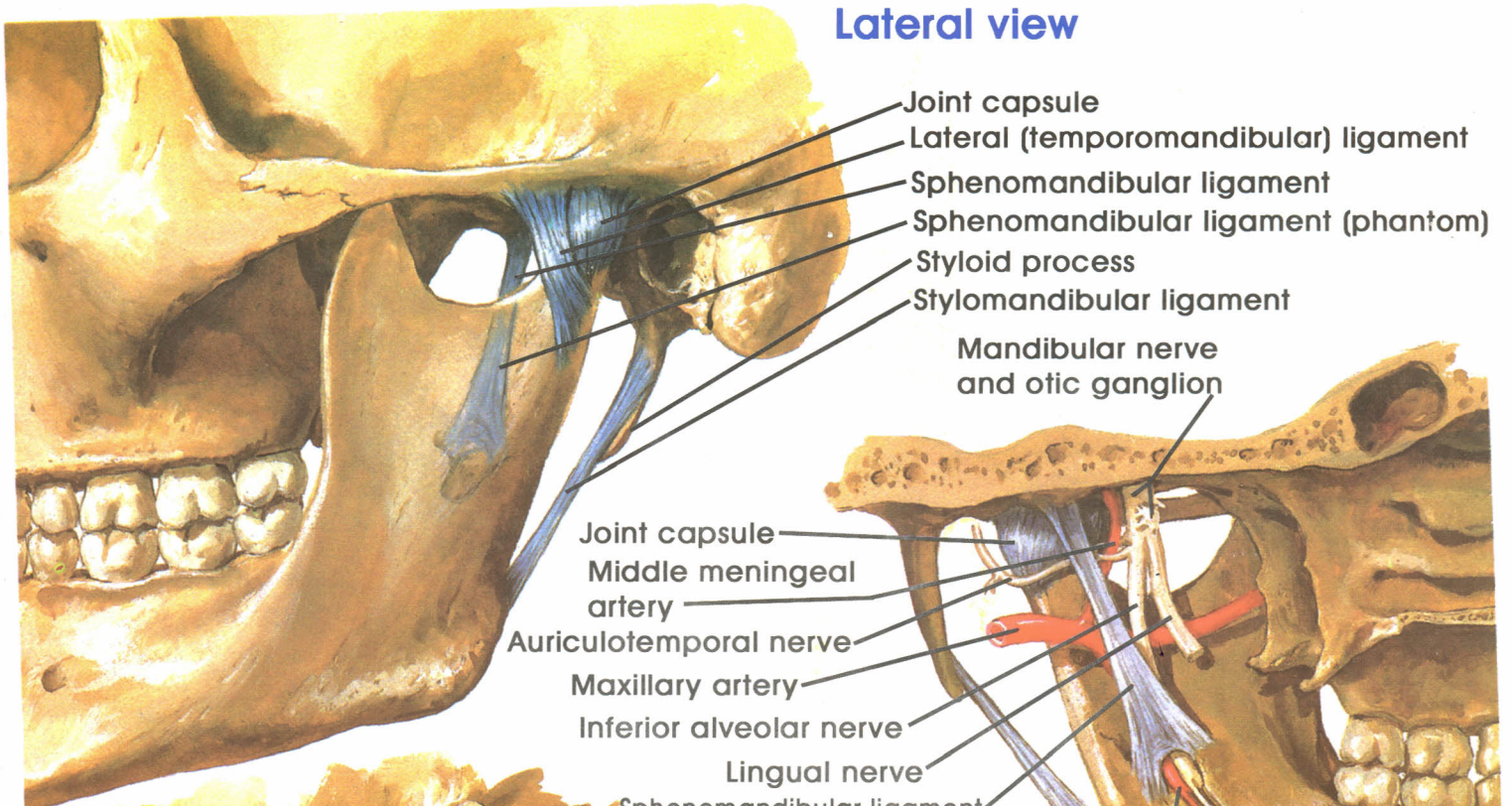
Axis (C2): posterosuperior view



4th cervical vertebra: superior view

7th cervical vertebra: superior view

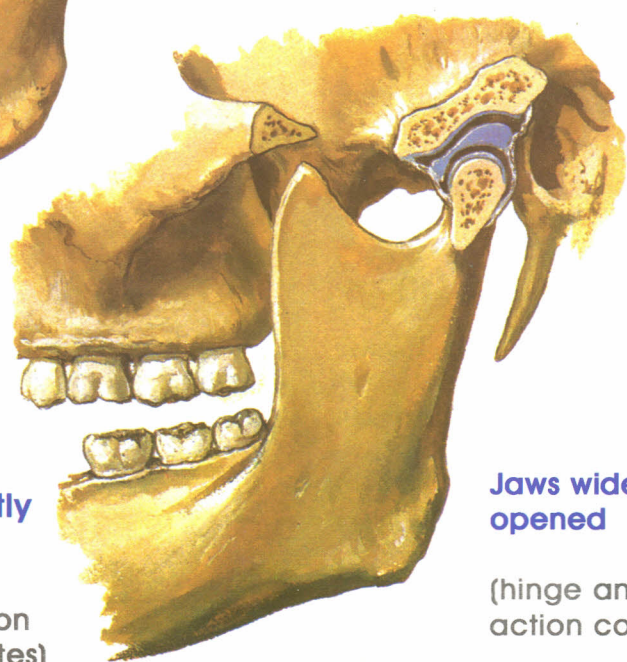
Lateral view



Medial view



Jaws closed



Jaws slightly opened

(hinge action predominates)



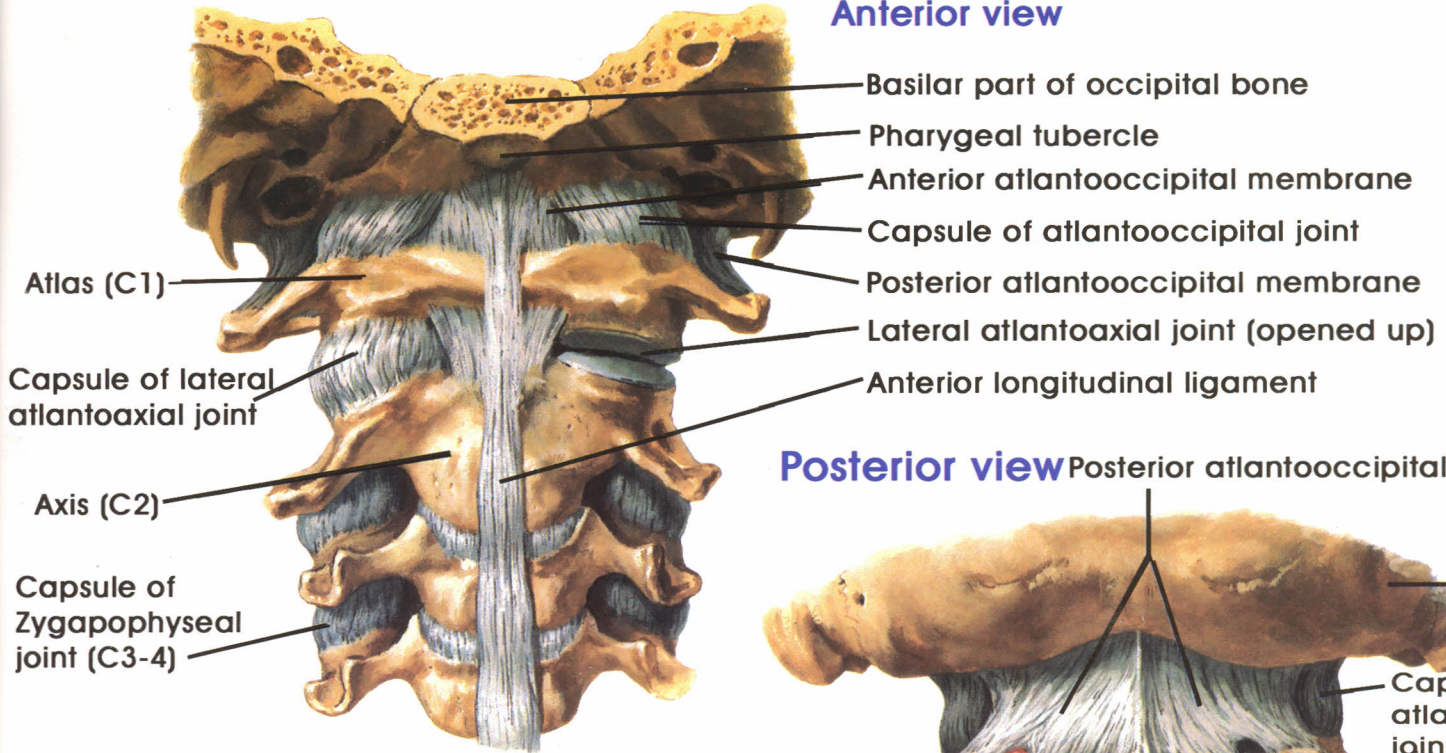
Jaws widely opened

(hinge and gliding action combined)

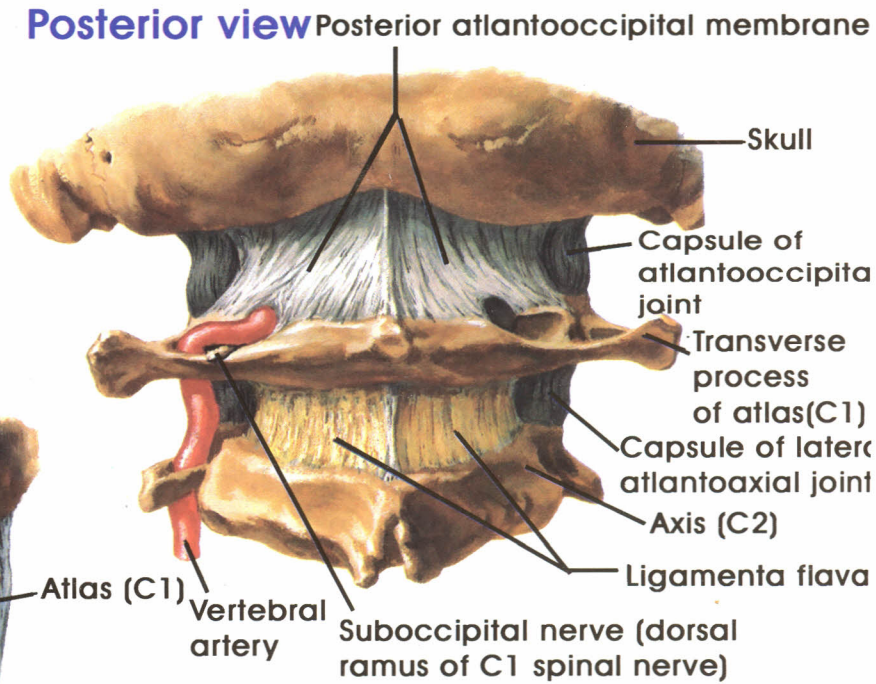
Fiky

Temporomandibular Joint

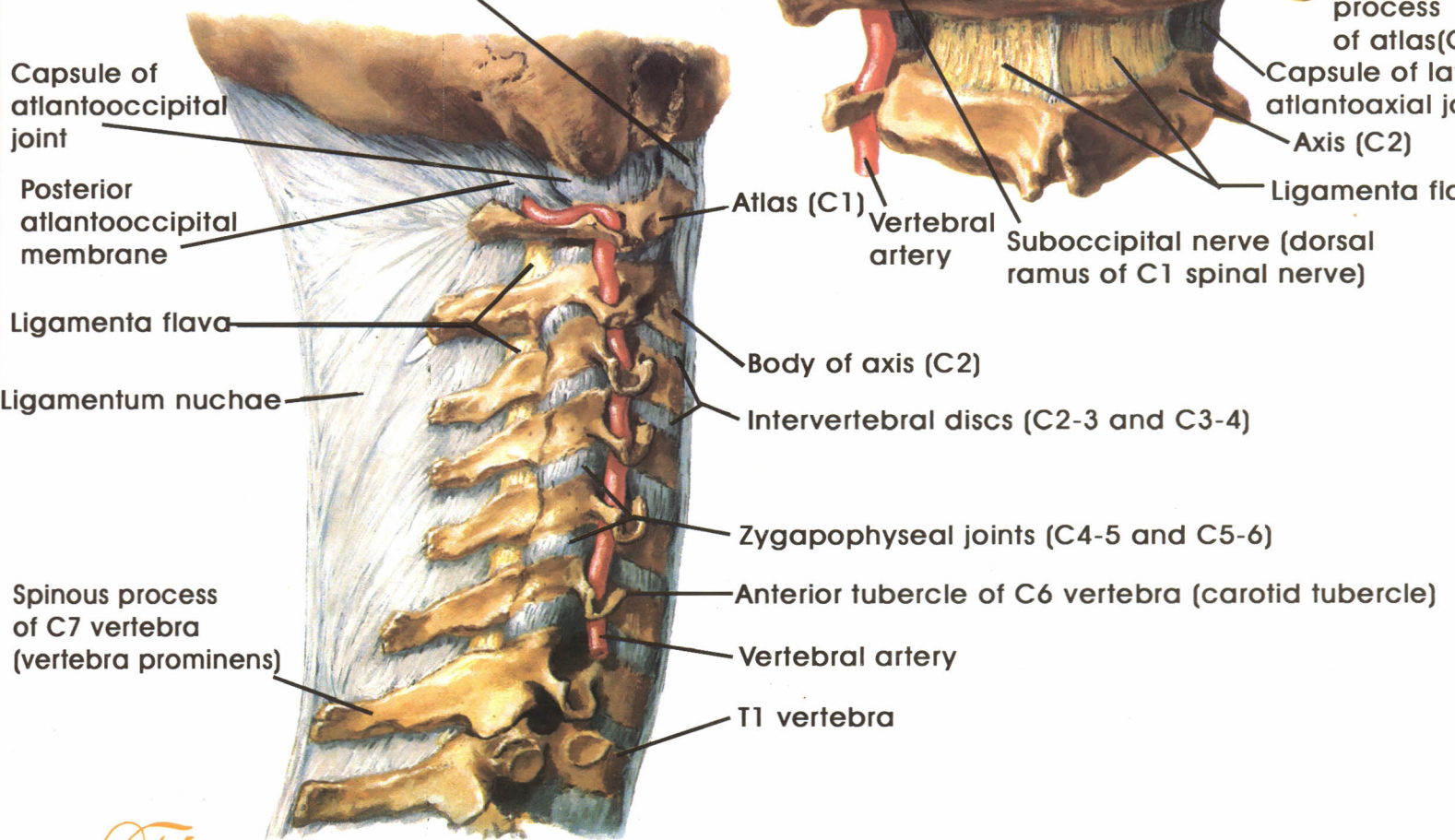
Anterior view



Posterior view



Anterior atlantooccipital membrane

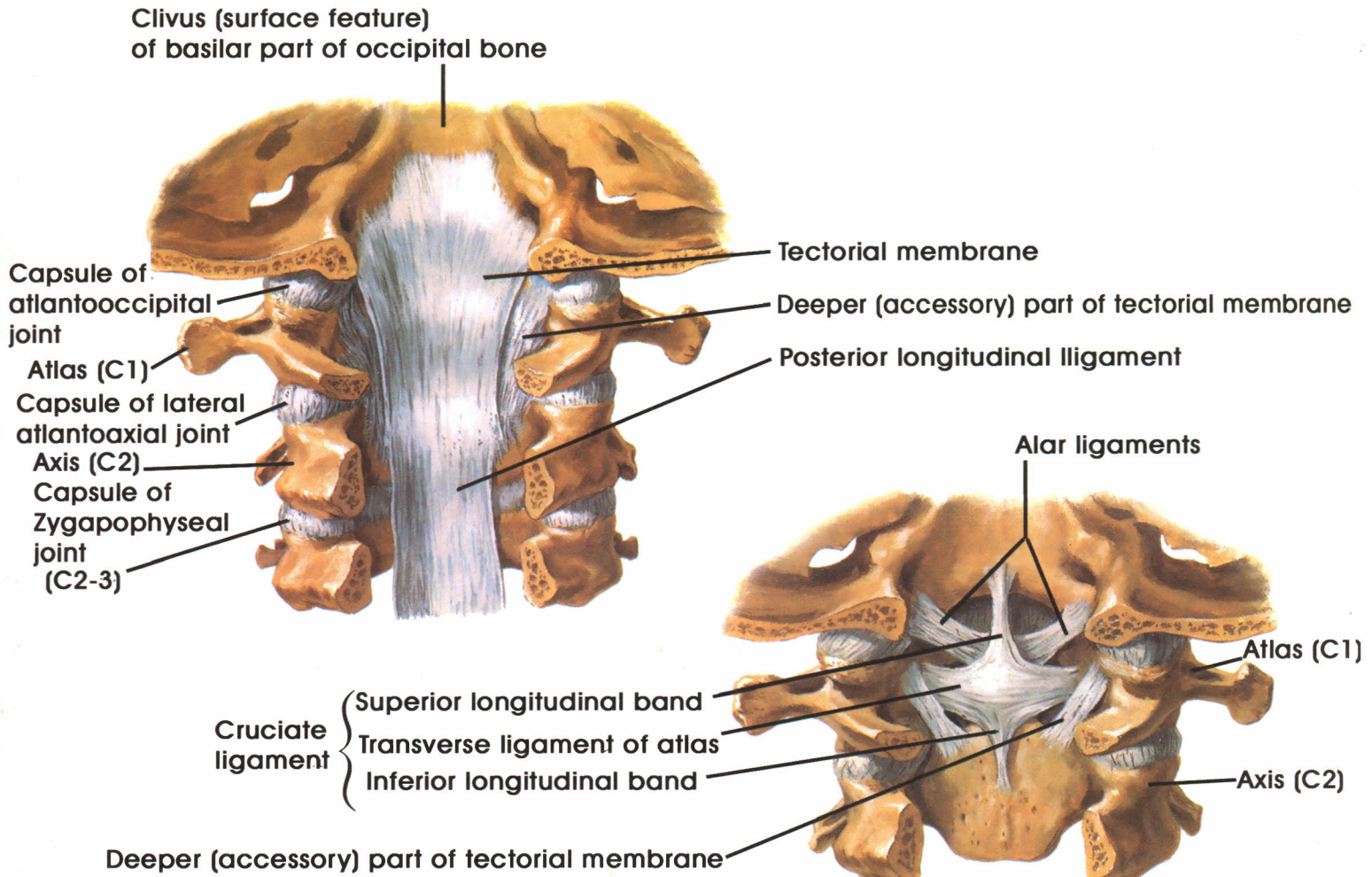


Right lateral view

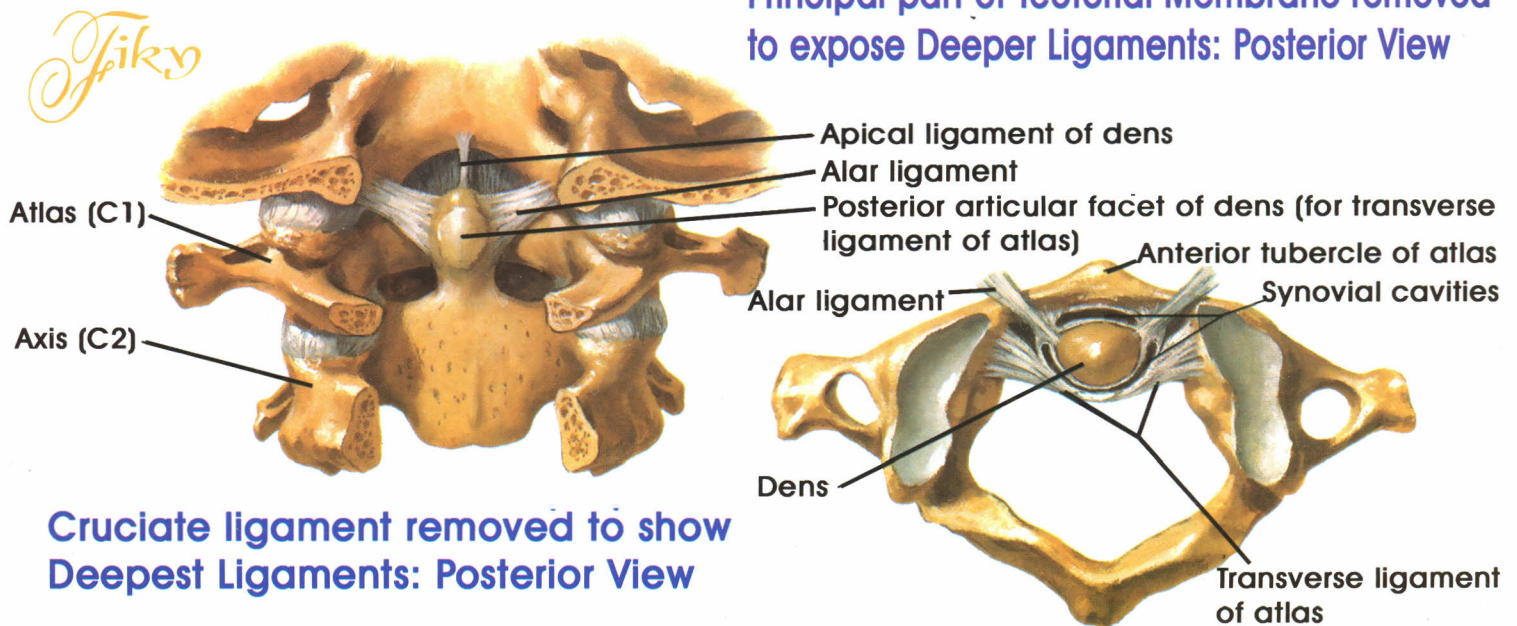
External craniocervical ligaments

Fiky

Upper part of vertebral canal with spinous processes and parts of vertebral arches removed to expose Ligaments on posterior vertebral bodies: Posterior View



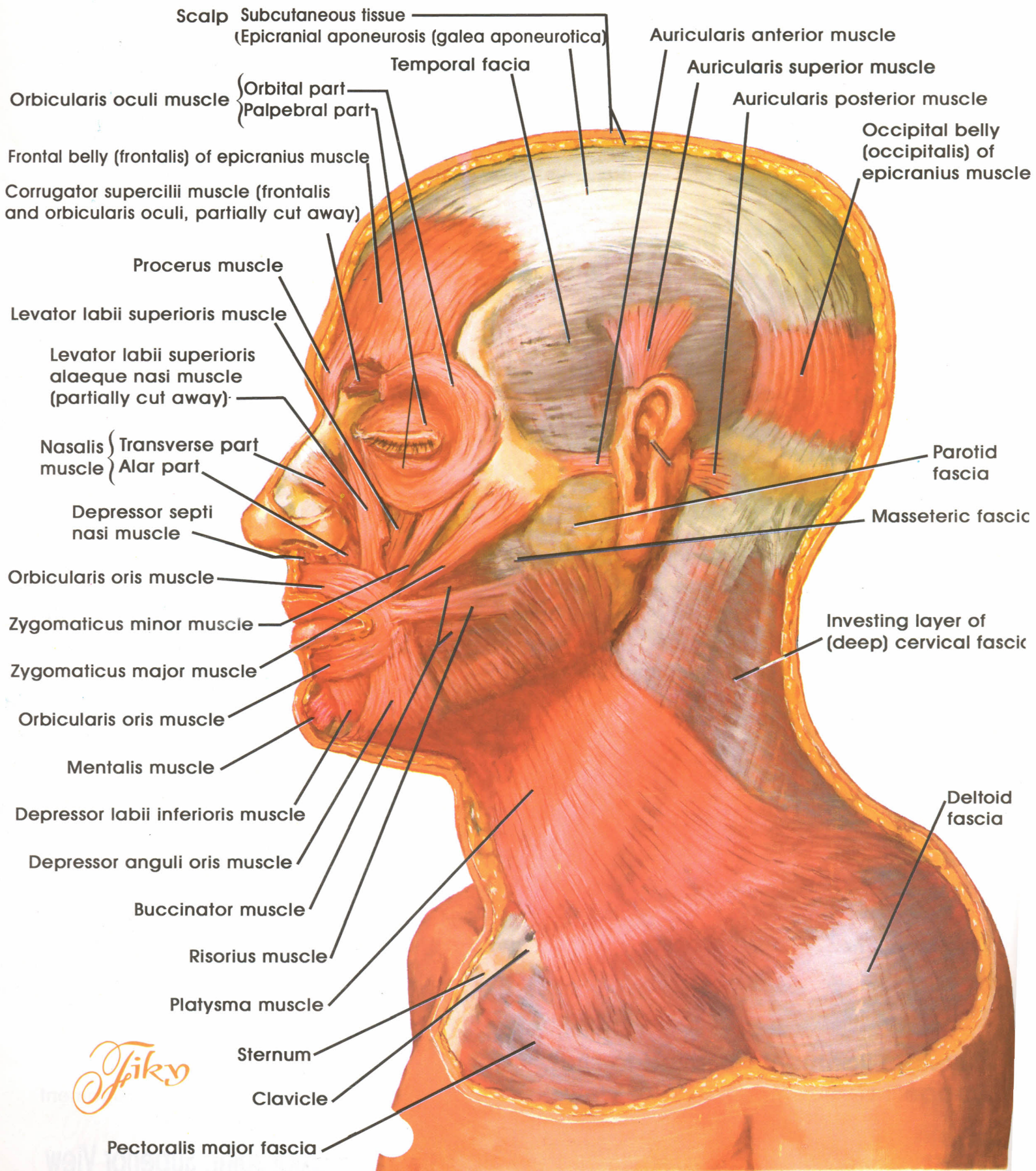
Principal part of Tectorial Membrane removed to expose Deeper Ligaments: Posterior View



Cruciate ligament removed to show Deepest Ligaments: Posterior View

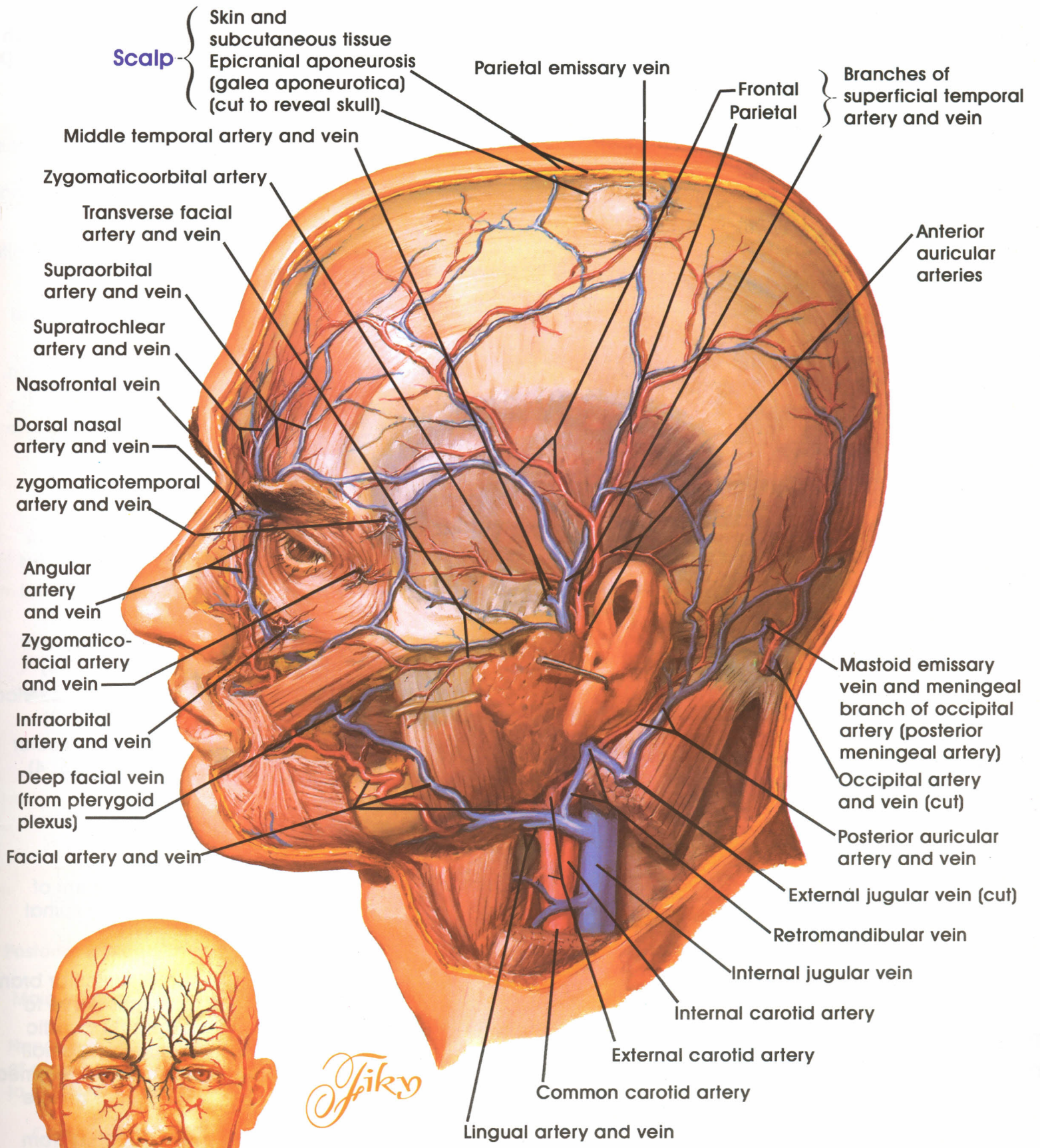
Median Atlantoaxial Joint: Superior View

Internal Craniocervical Ligaments



Spiky

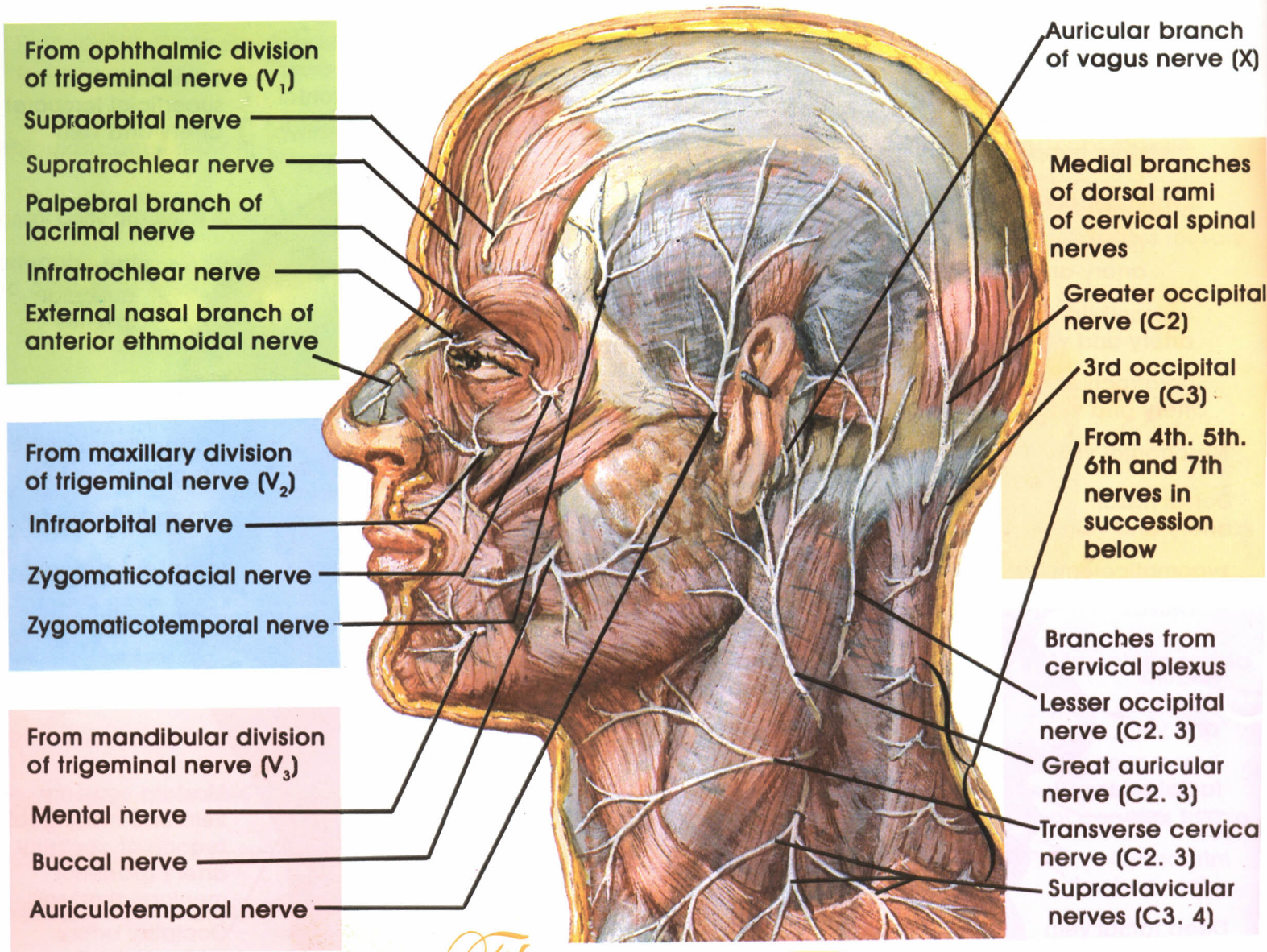
Muscles of Facial Expression - Lateral View



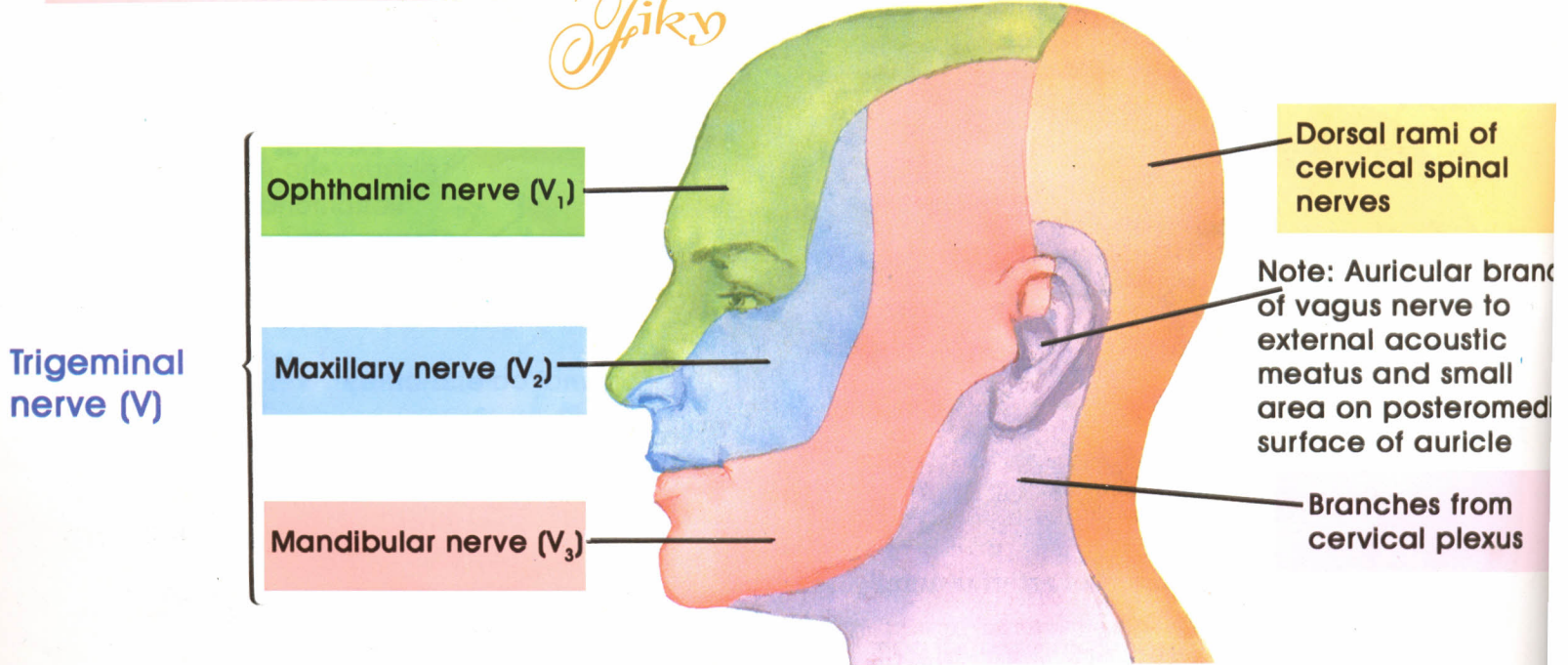
Sources of arterial supply of face
 Black : from internal carotid artery (via ophthalmic artery)
 Red : from external carotid artery

Blood Supply of the Face

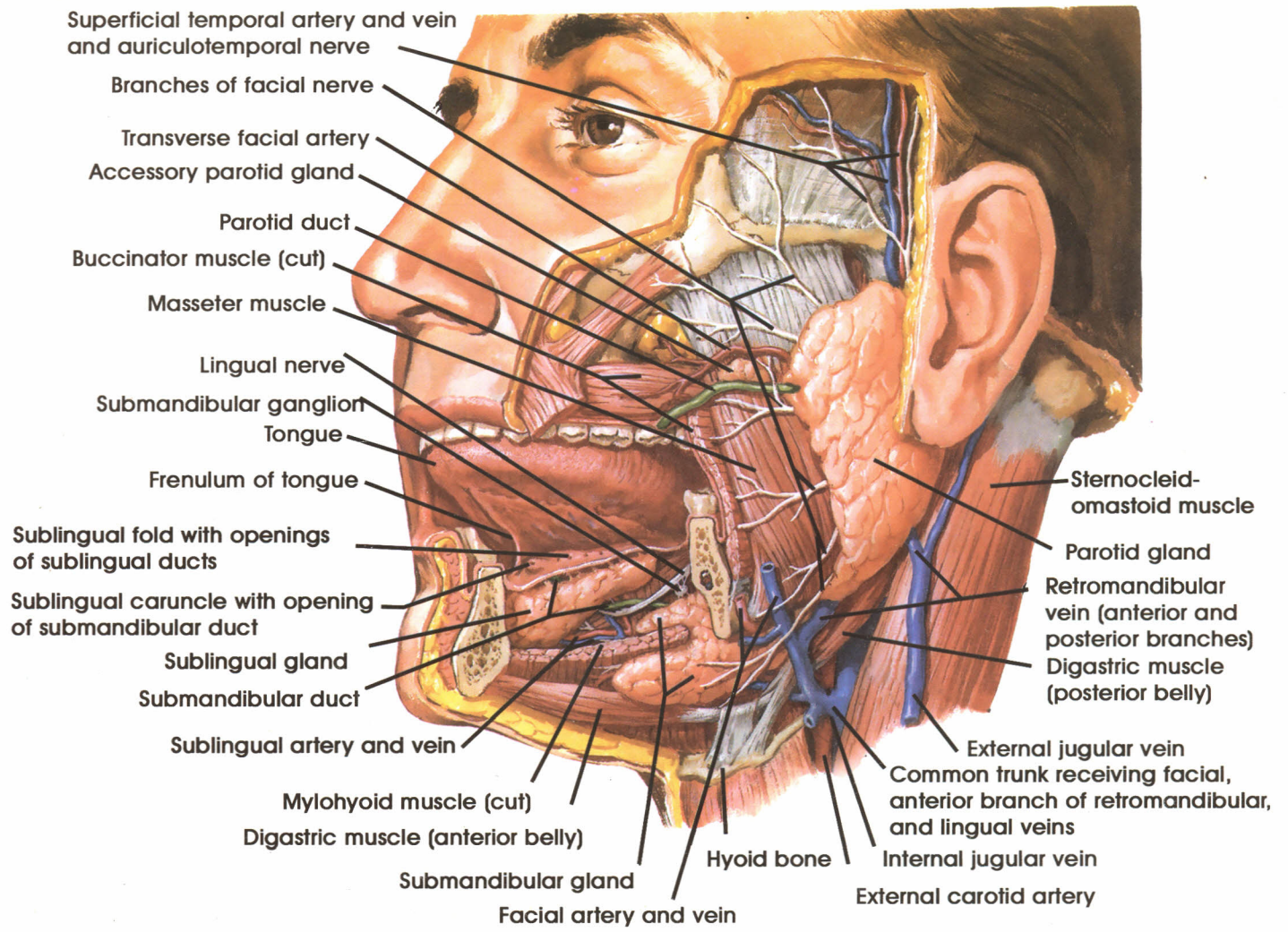
Spiky



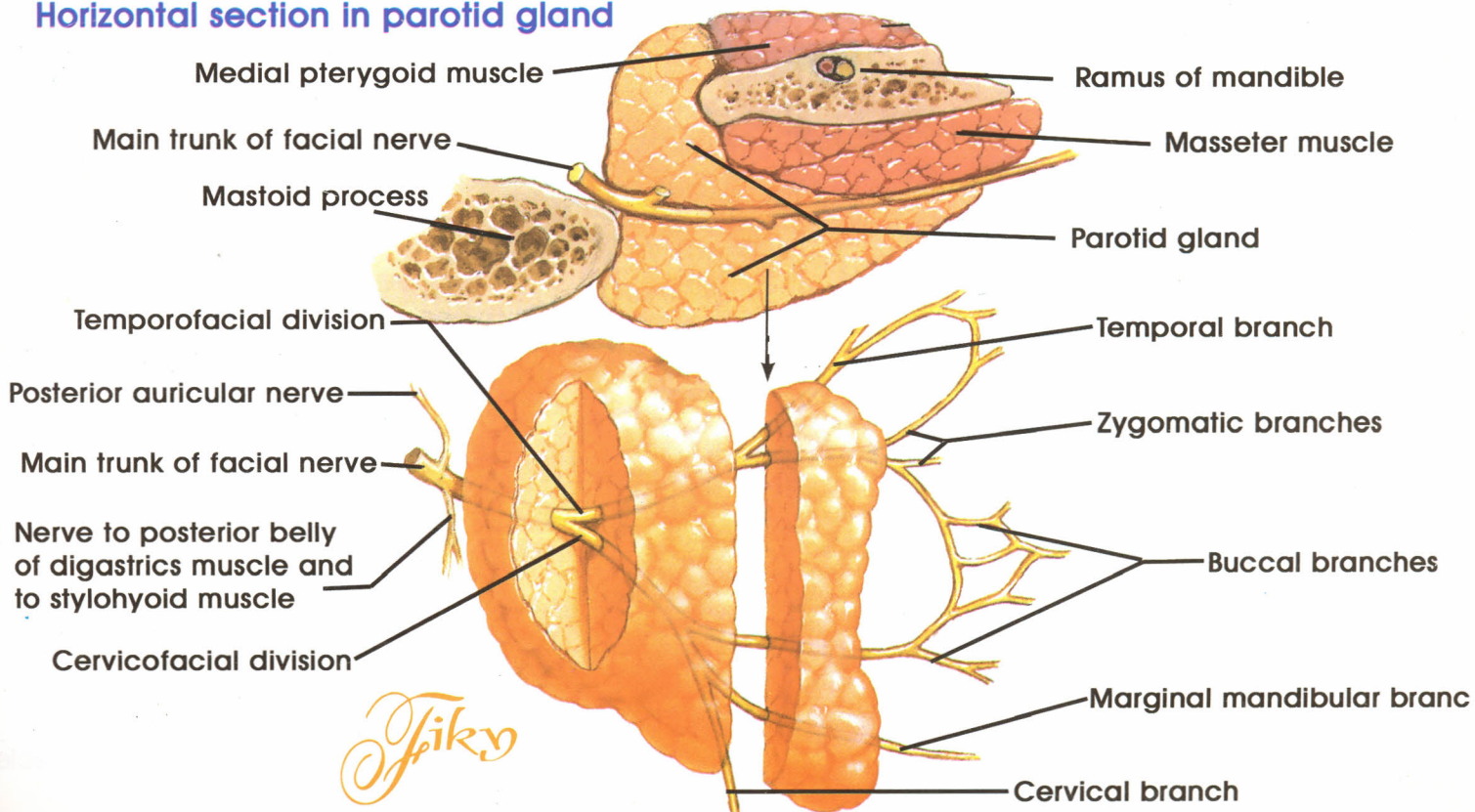
Spiky



Cutaneous Nerves of the Head and Neck

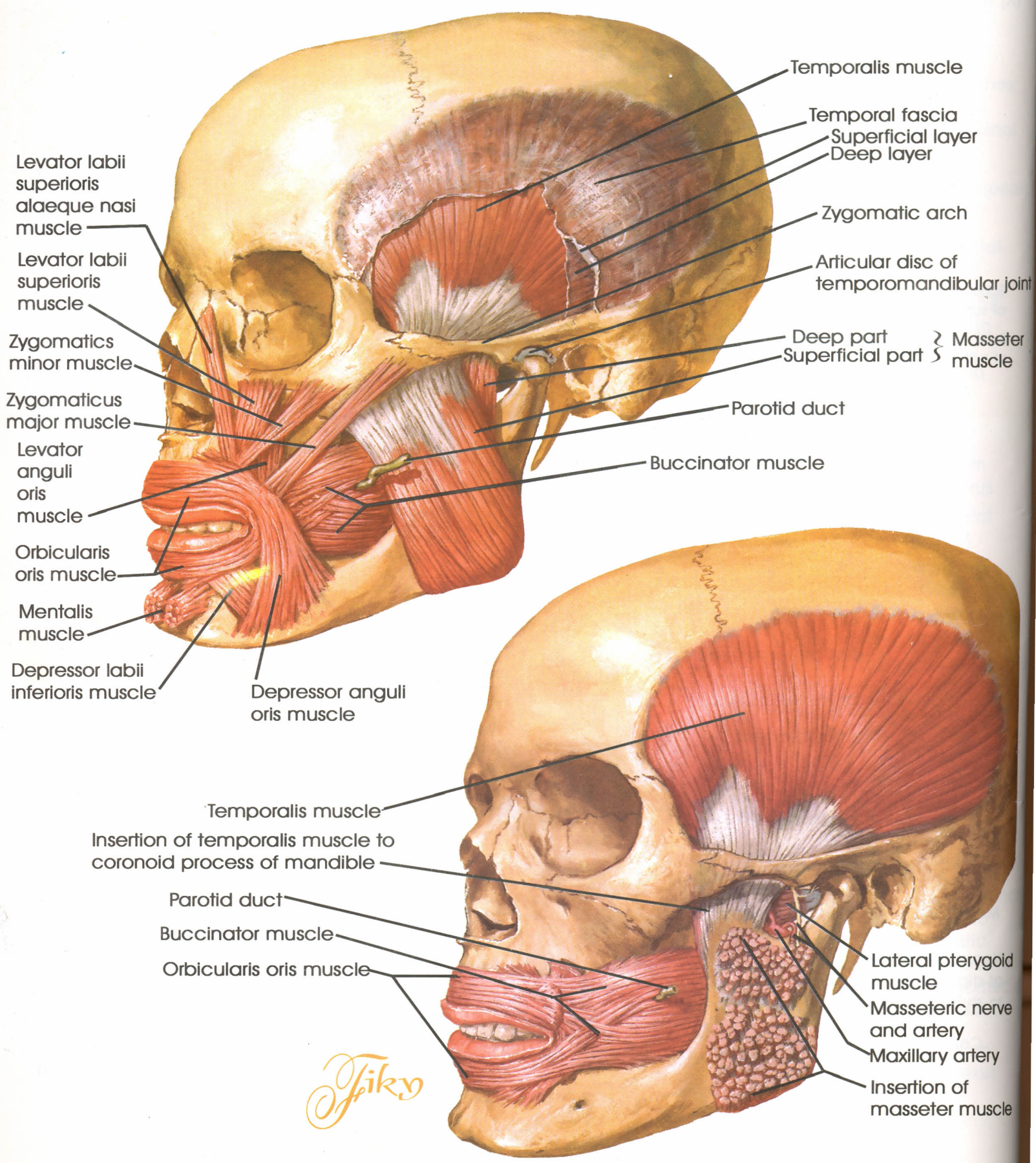


Horizontal section in parotid gland



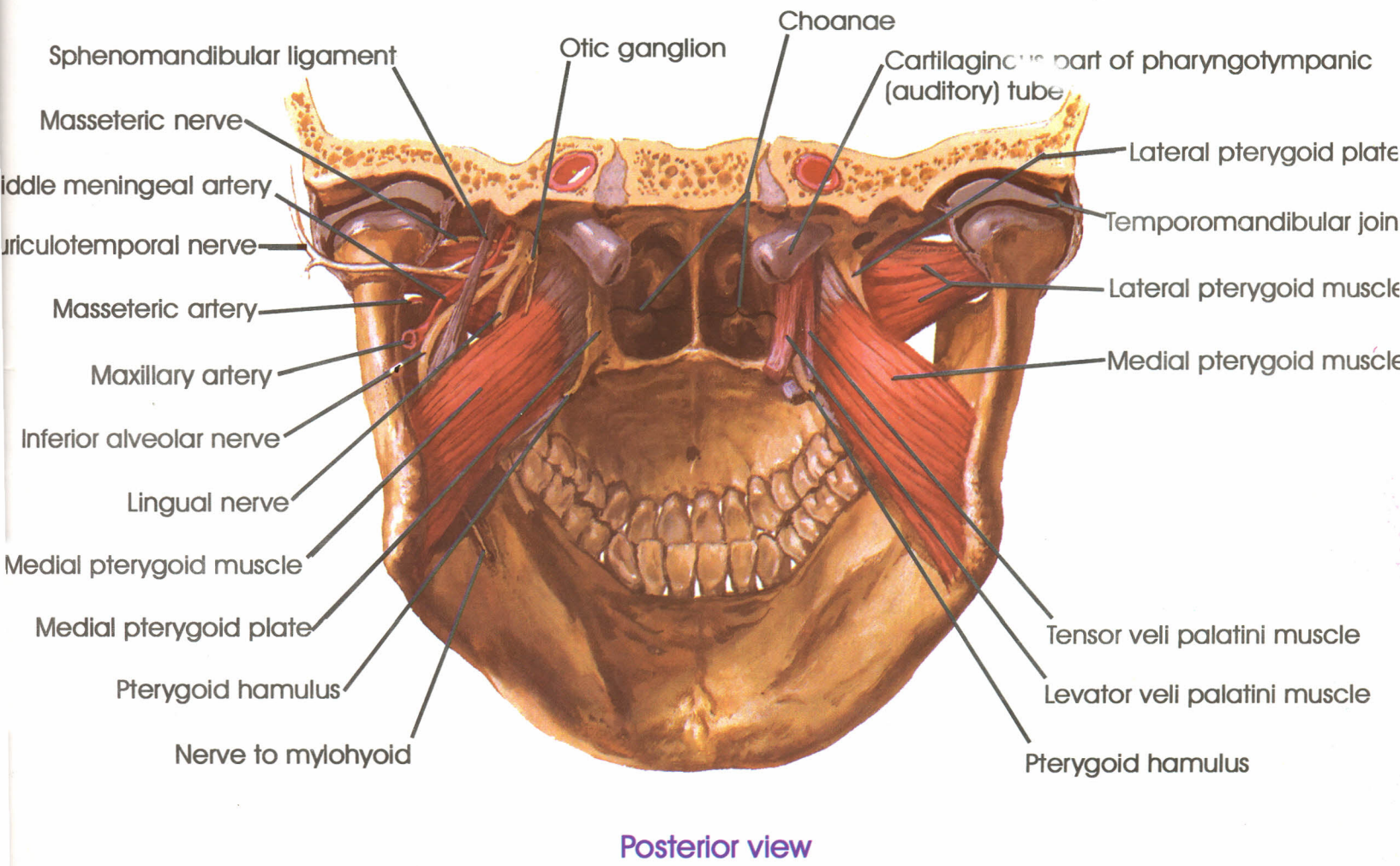
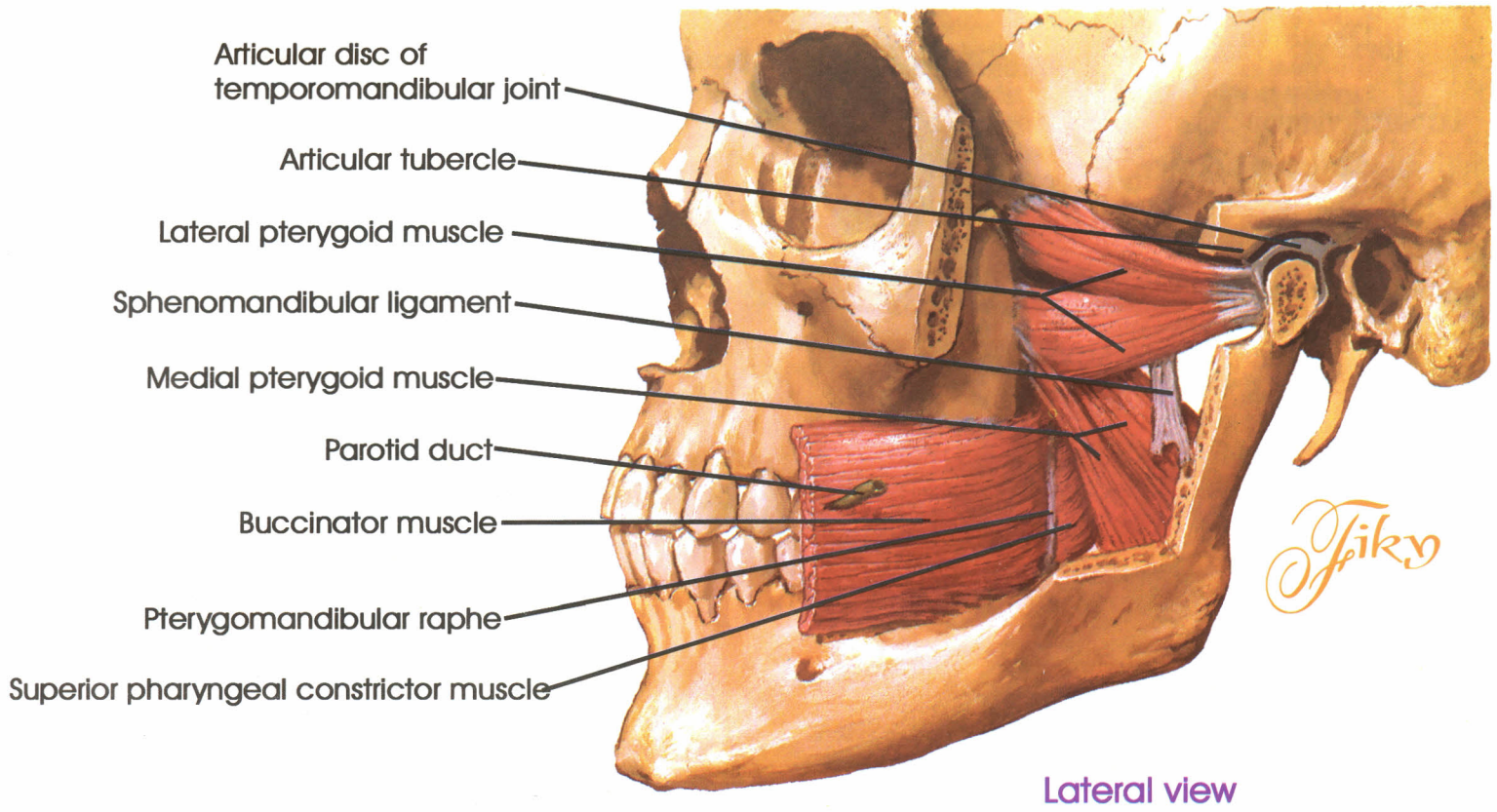
Facial nerve branches in the Parotid gland

Salivary glands

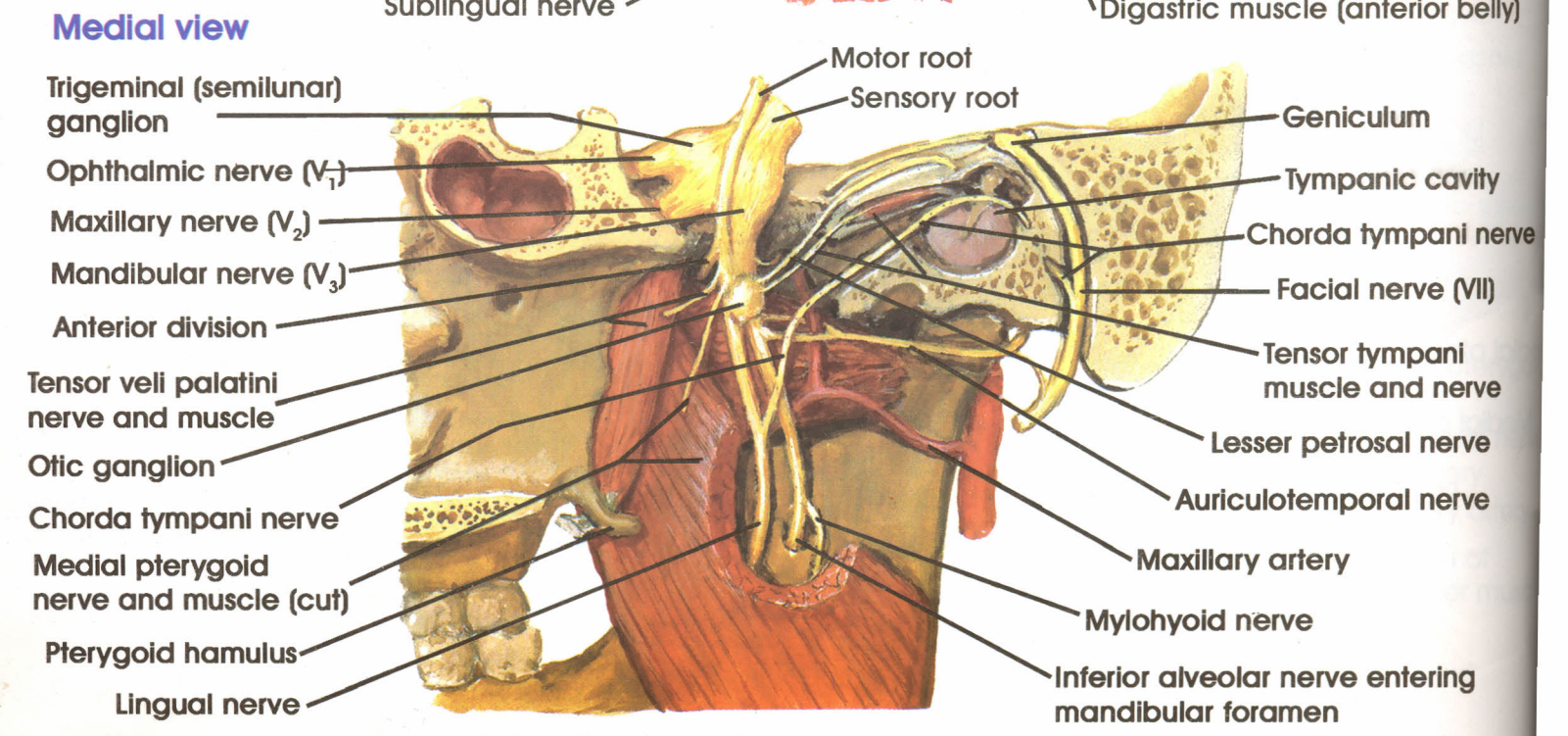
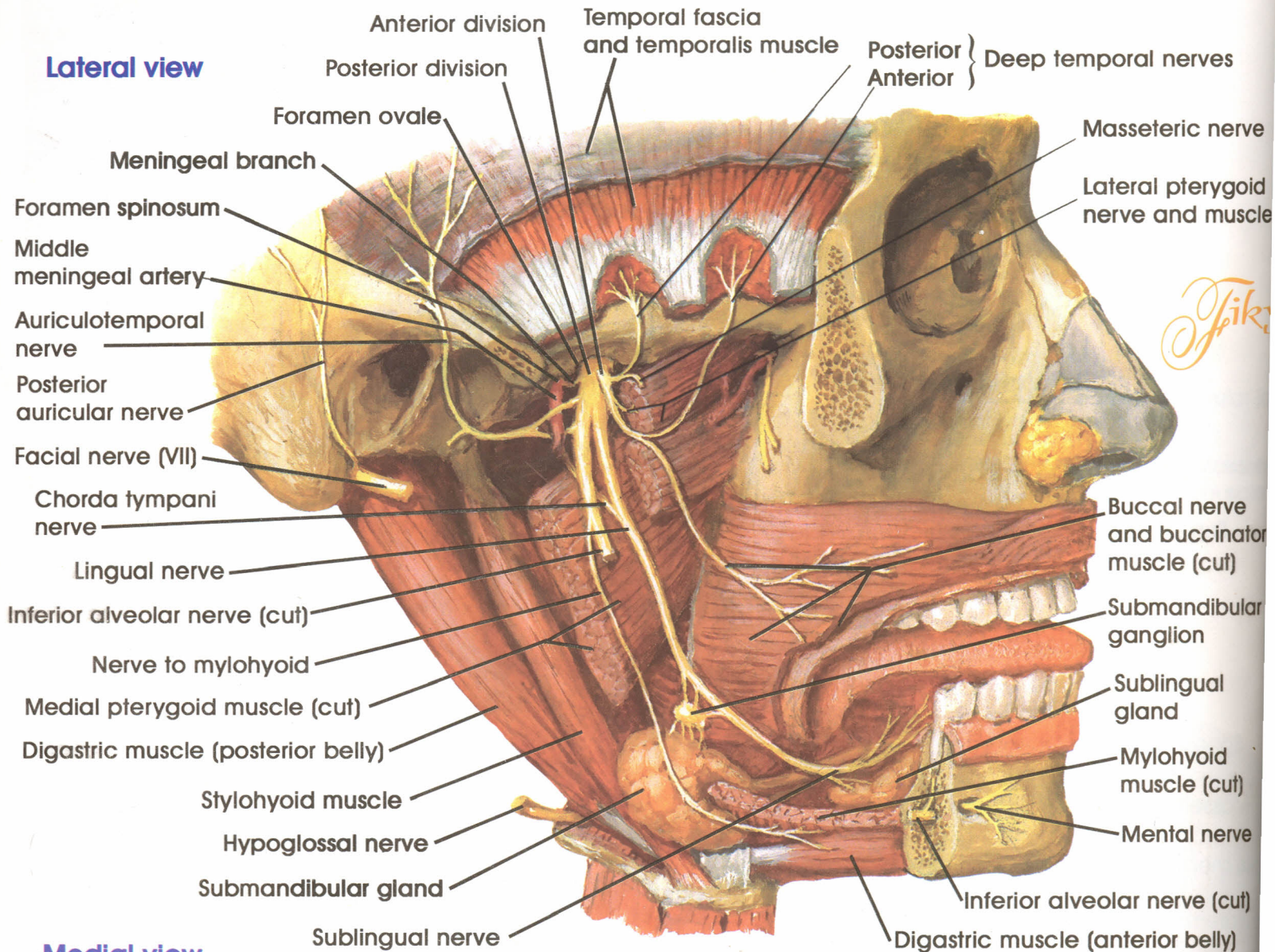


Fiky

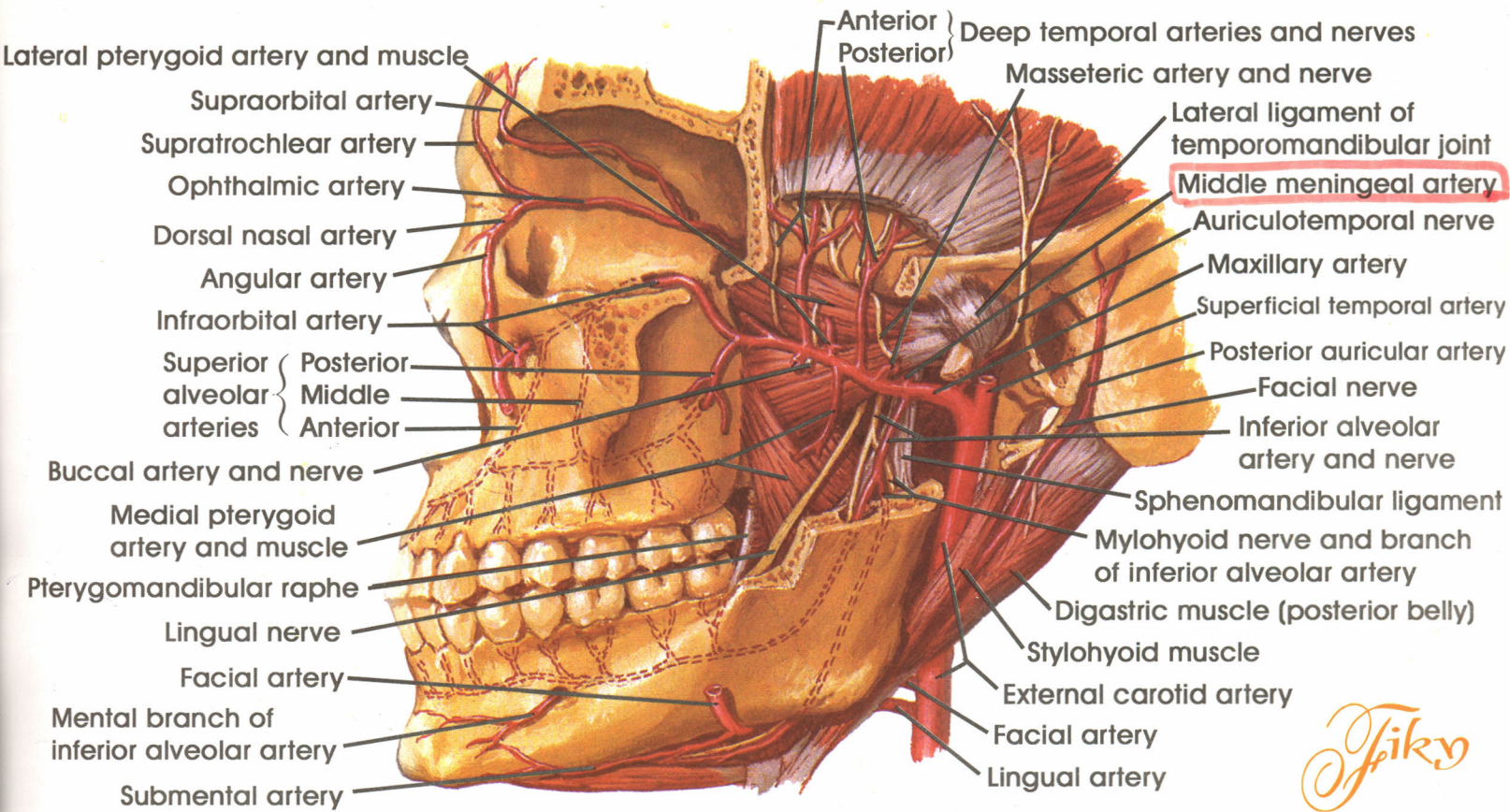
Muscles involved in mastication



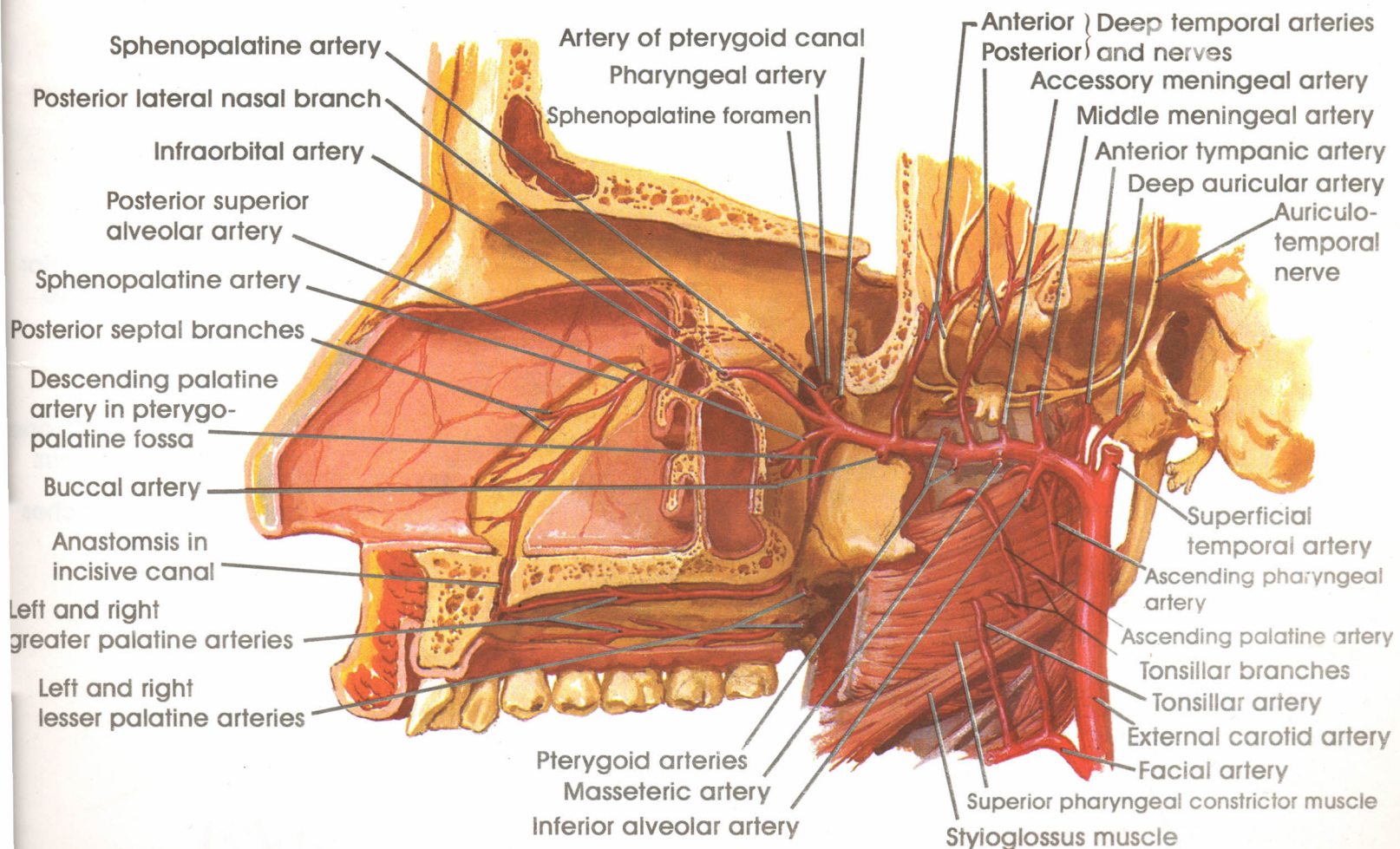
Muscles Involved in Mastication (continued)



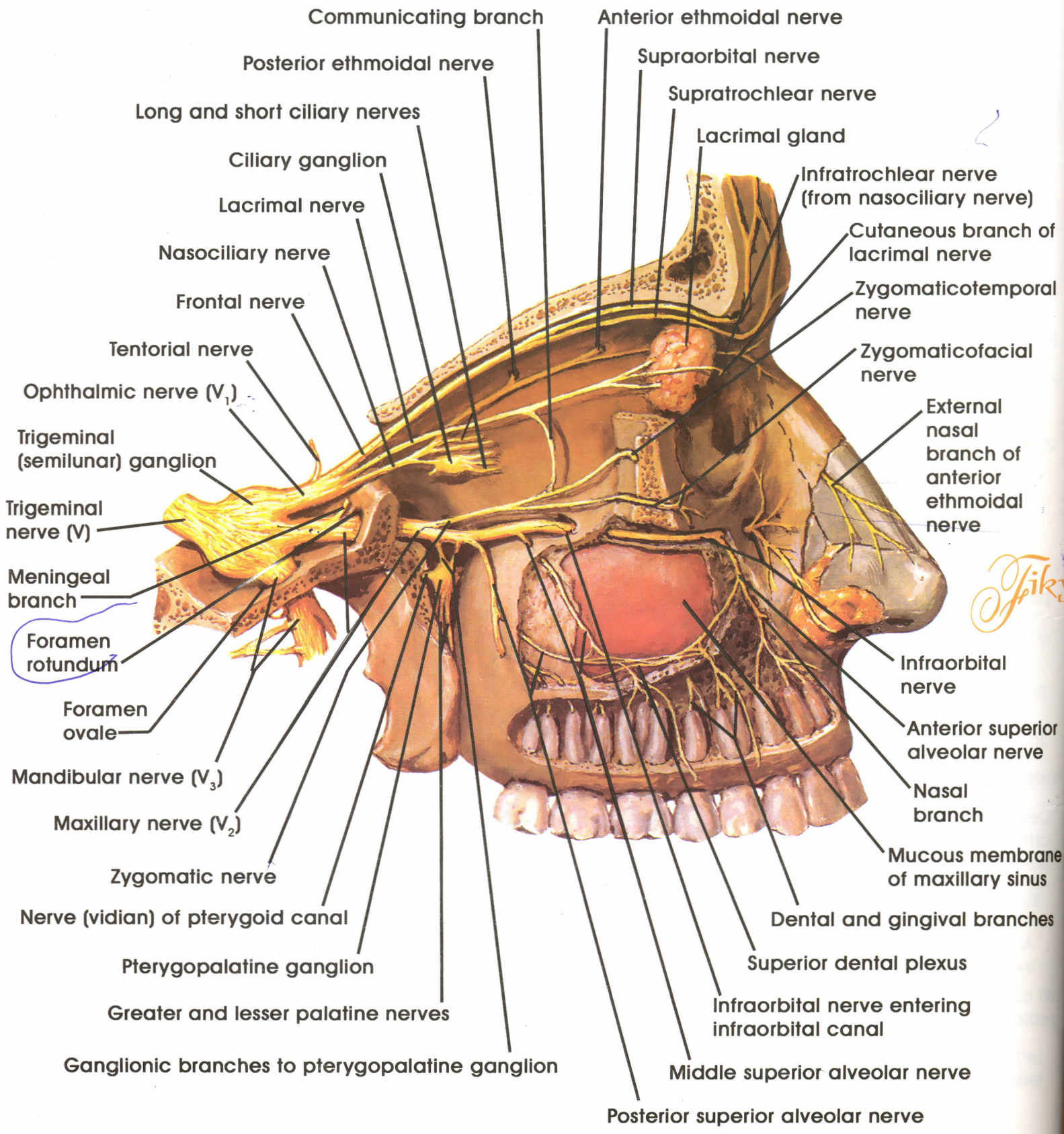
Mandibular Nerve (V3)



Spiky

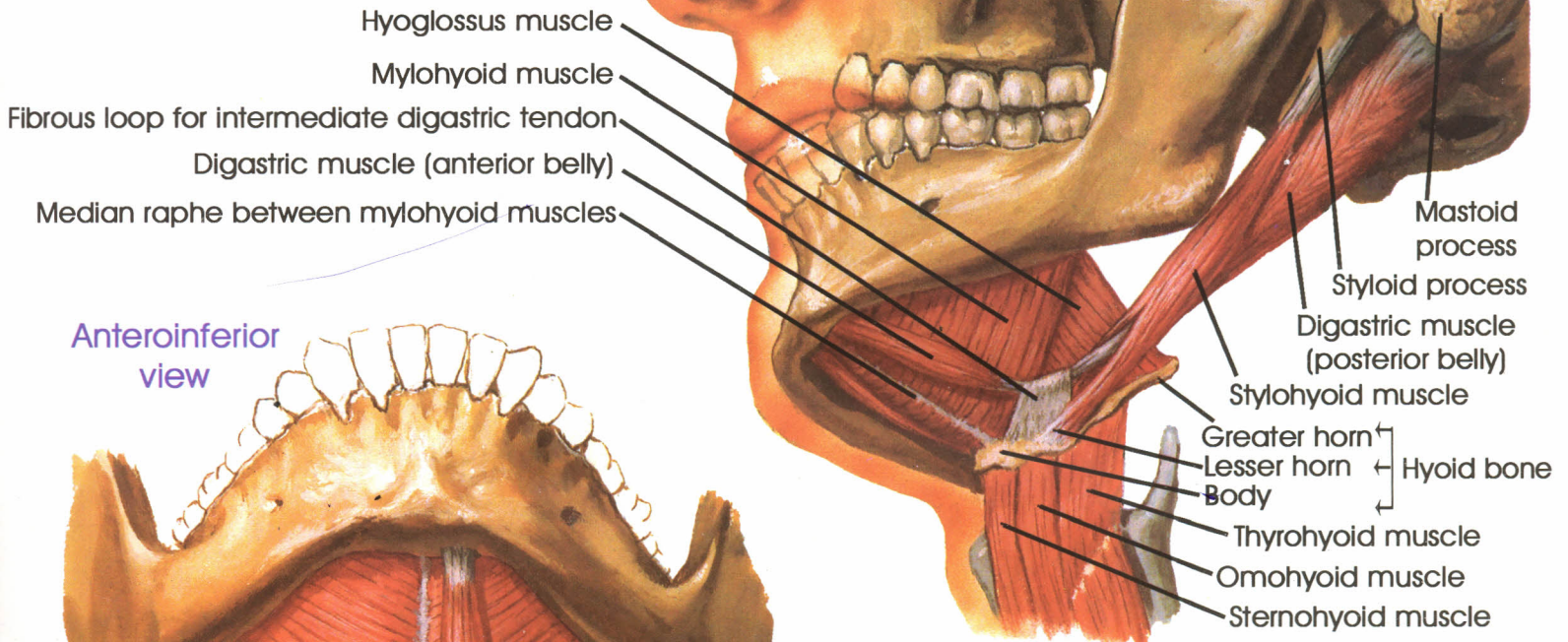


Maxillary artery

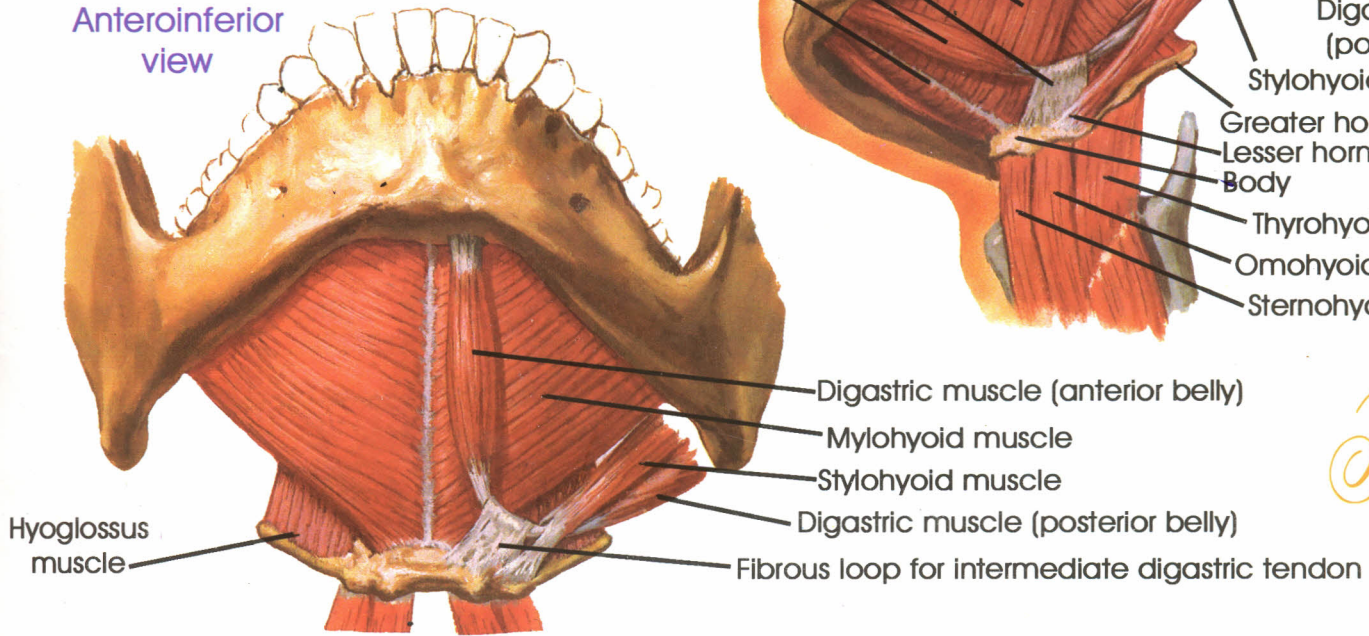


Ophthalmic (v1) and Maxillary(V2)

Lateral, slightly inferior view

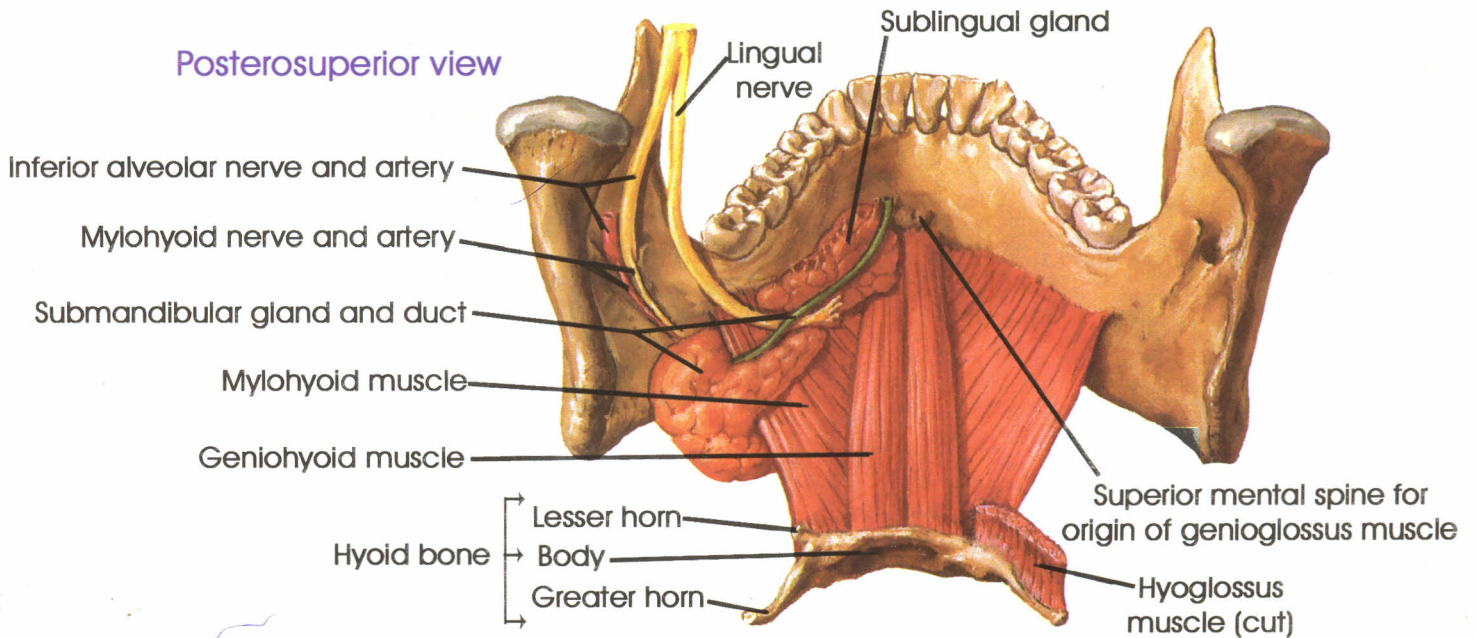


Anteroinferior view

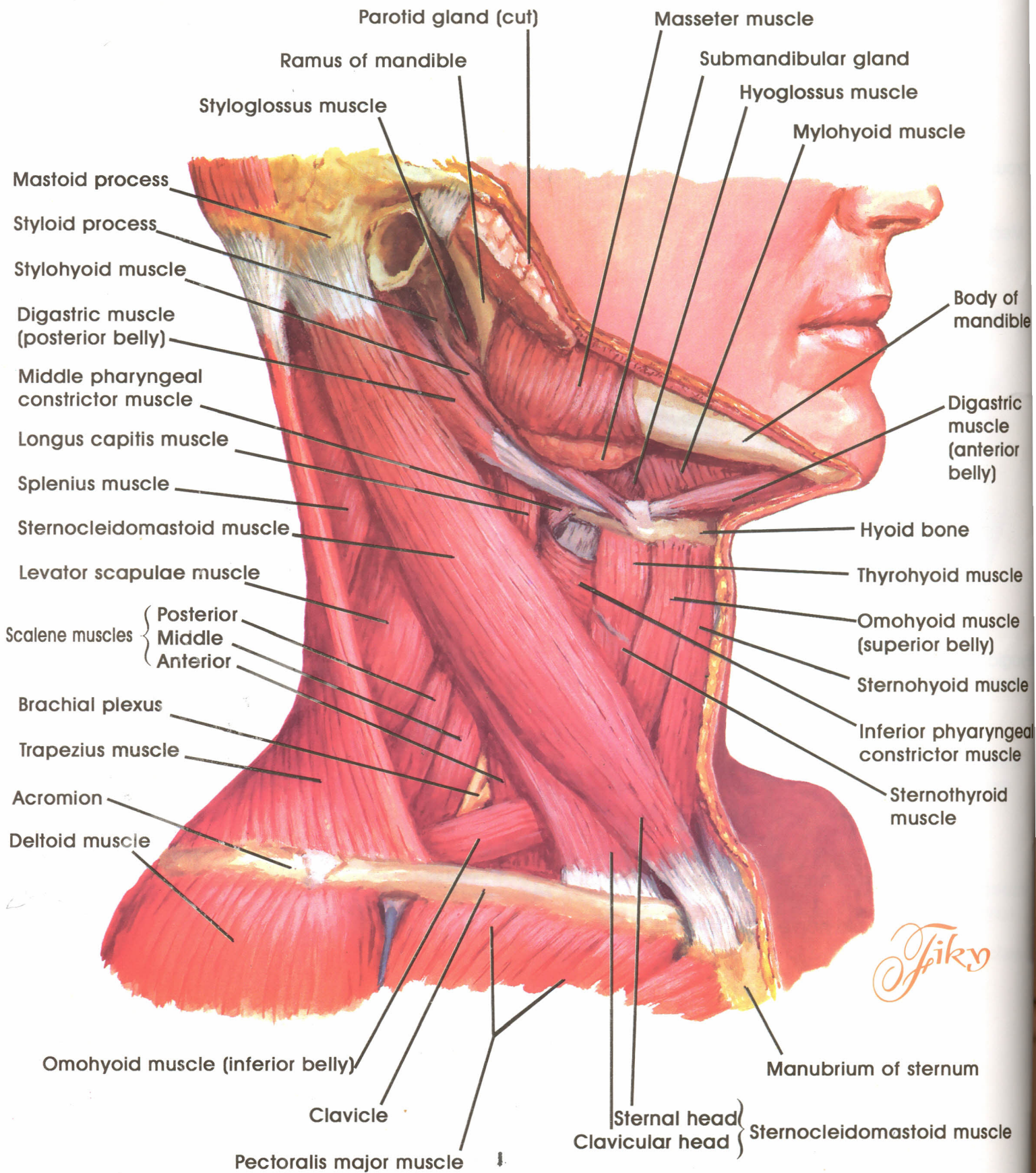


Fiky

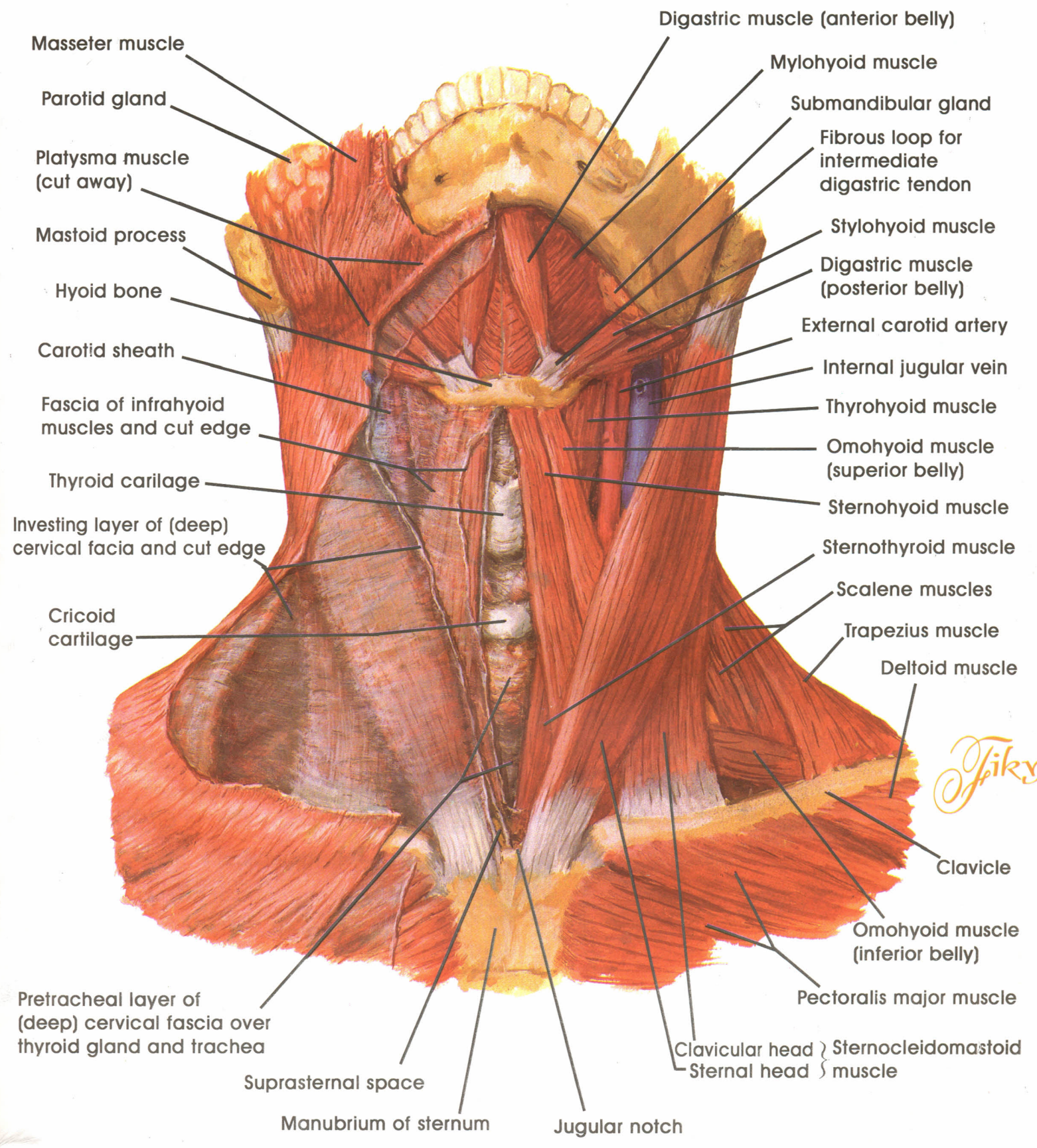
Posterosuperior view



Floor of Mouth



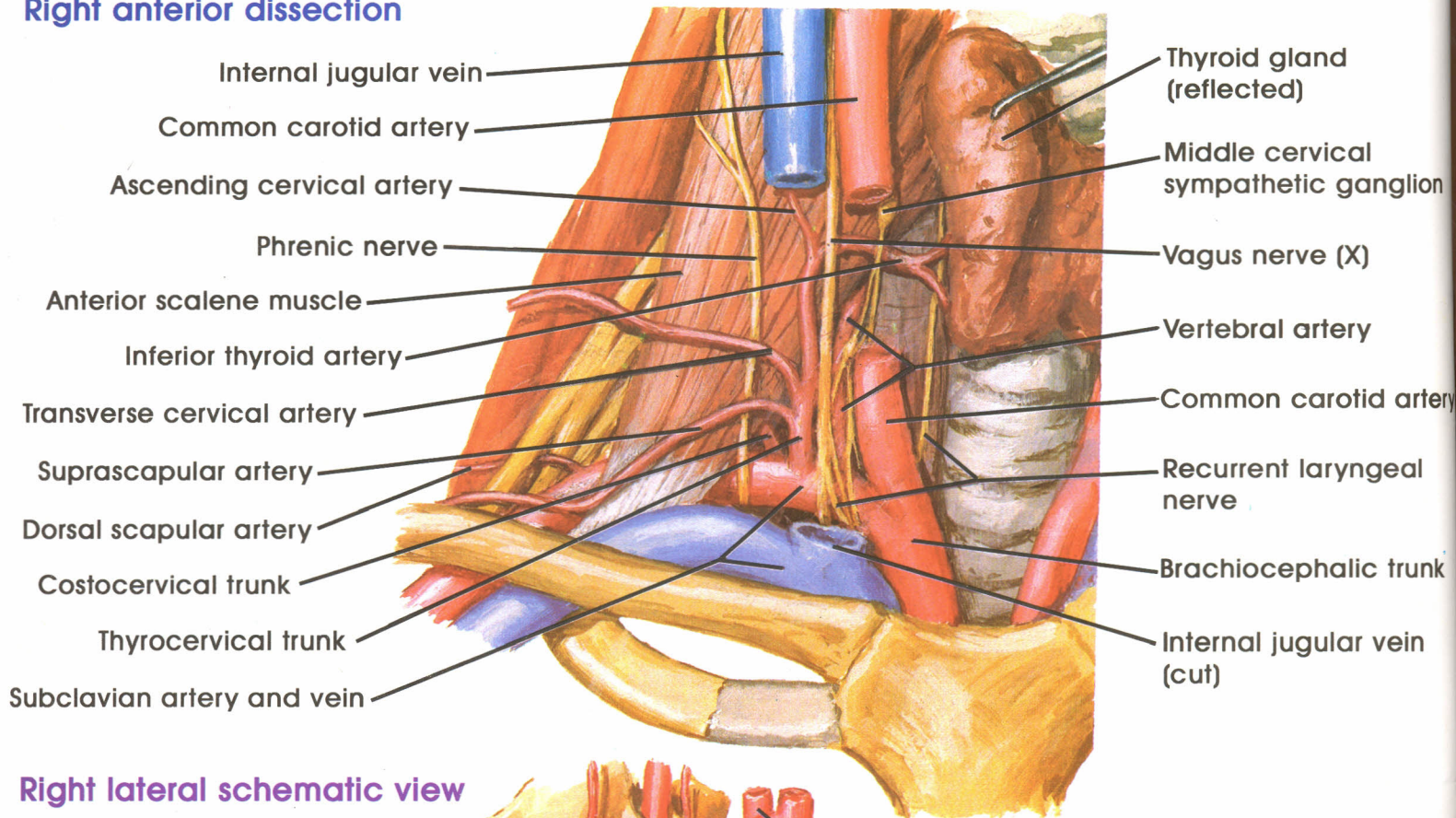
Muscles of neck - Lateral View



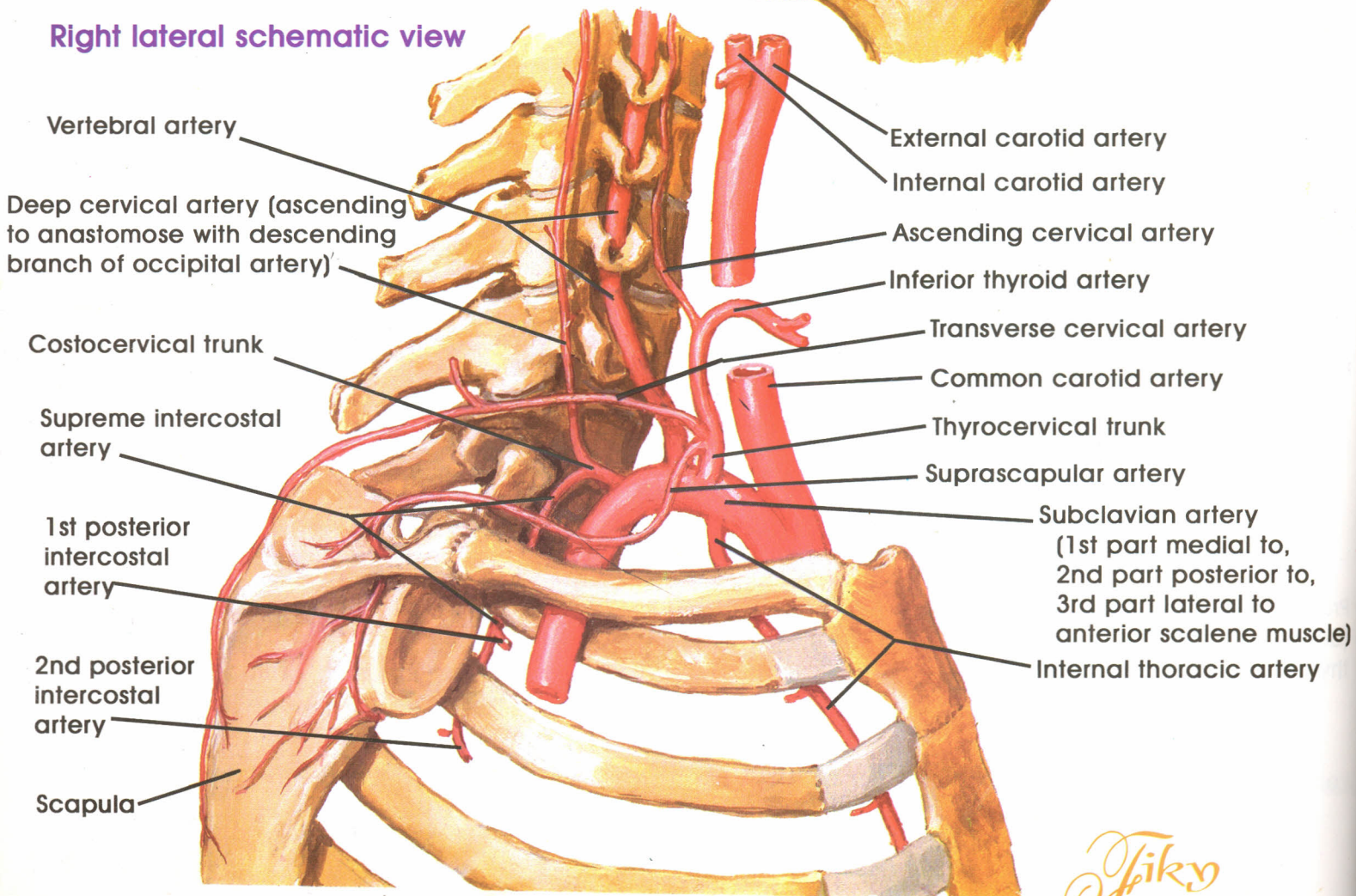
Spiky

Muscles of Neck- anterior view

Right anterior dissection

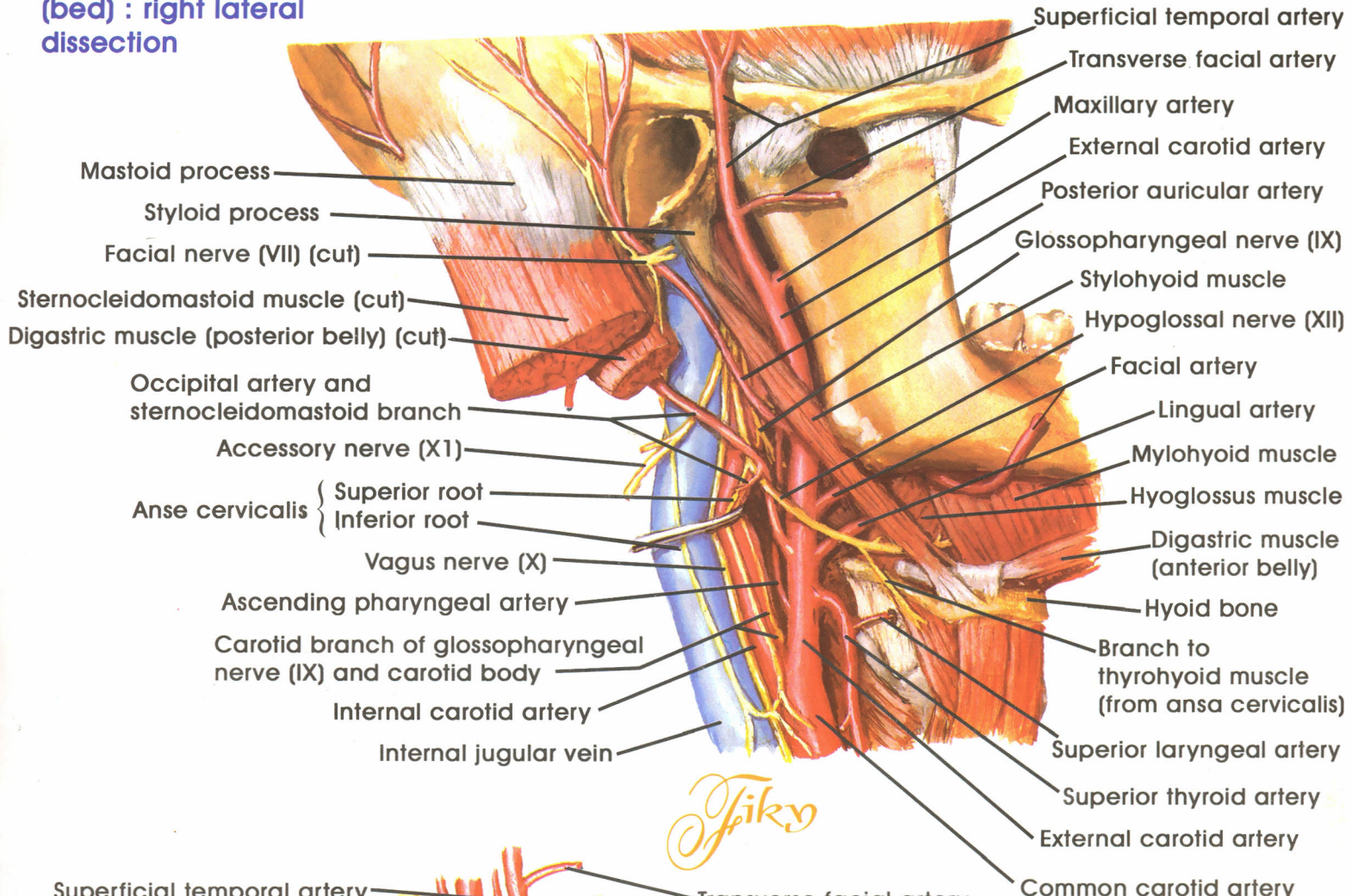


Right lateral schematic view

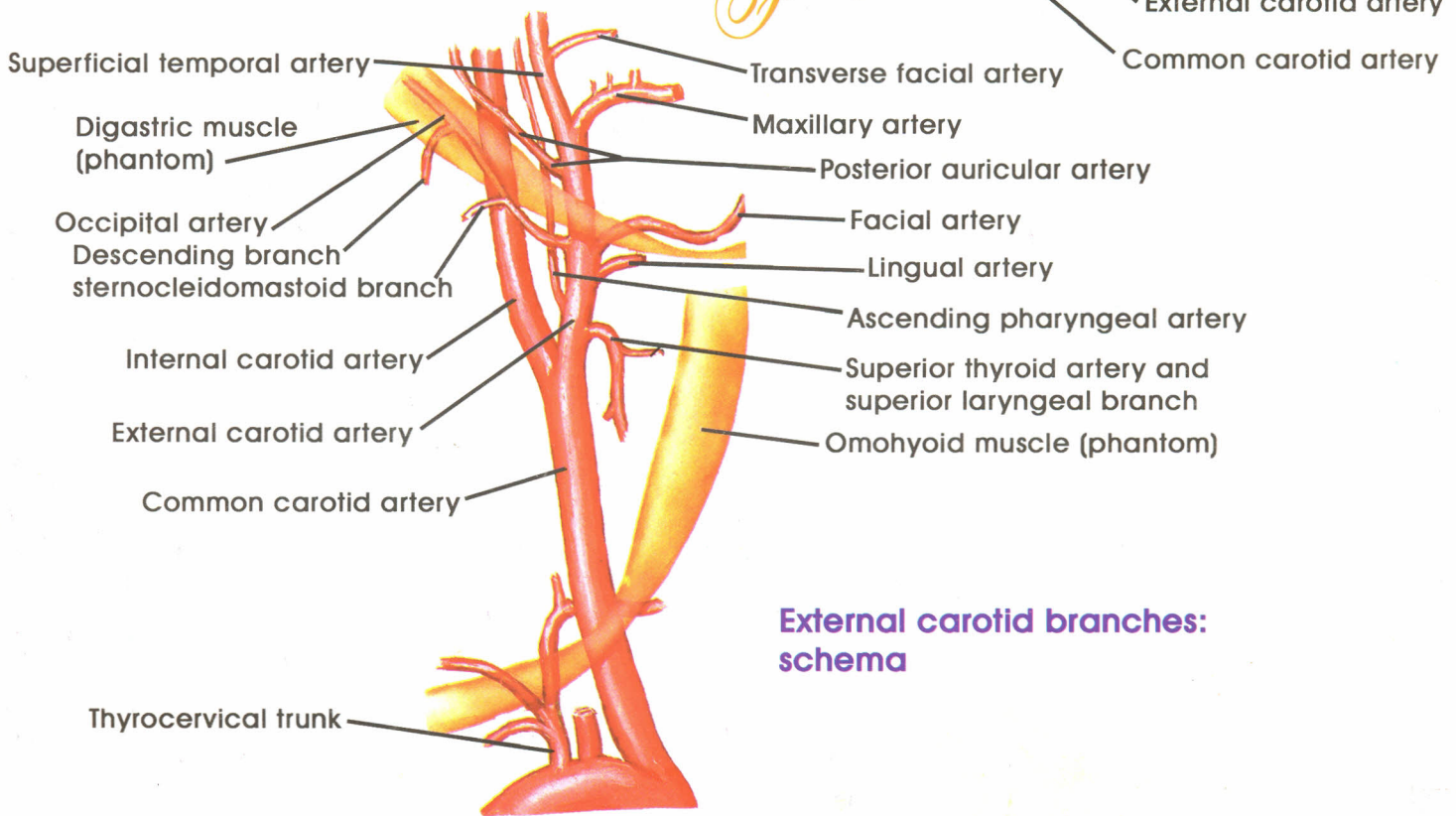


Subclavian Artery

Parotid space (bed) : right lateral dissection

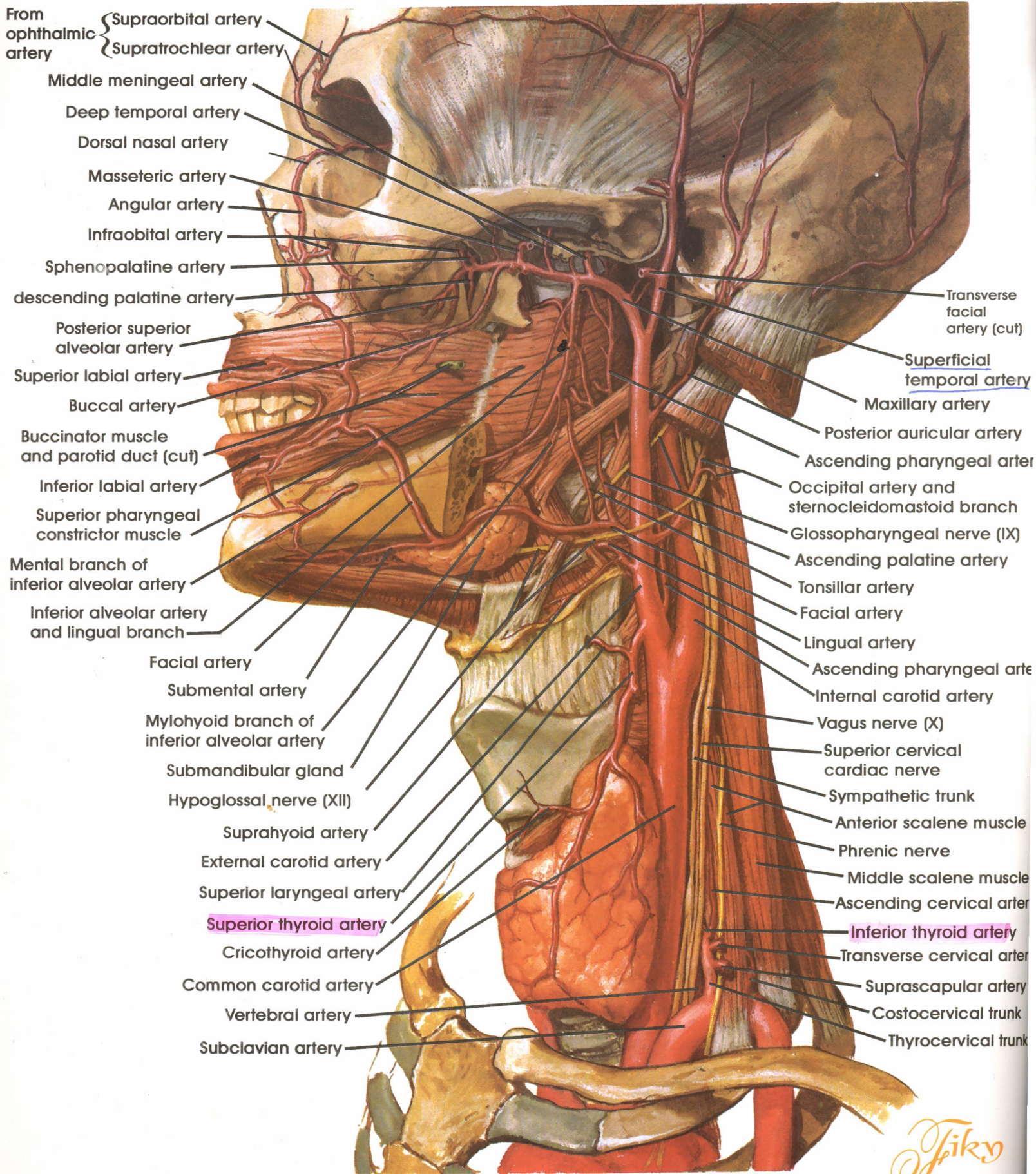


Jiky

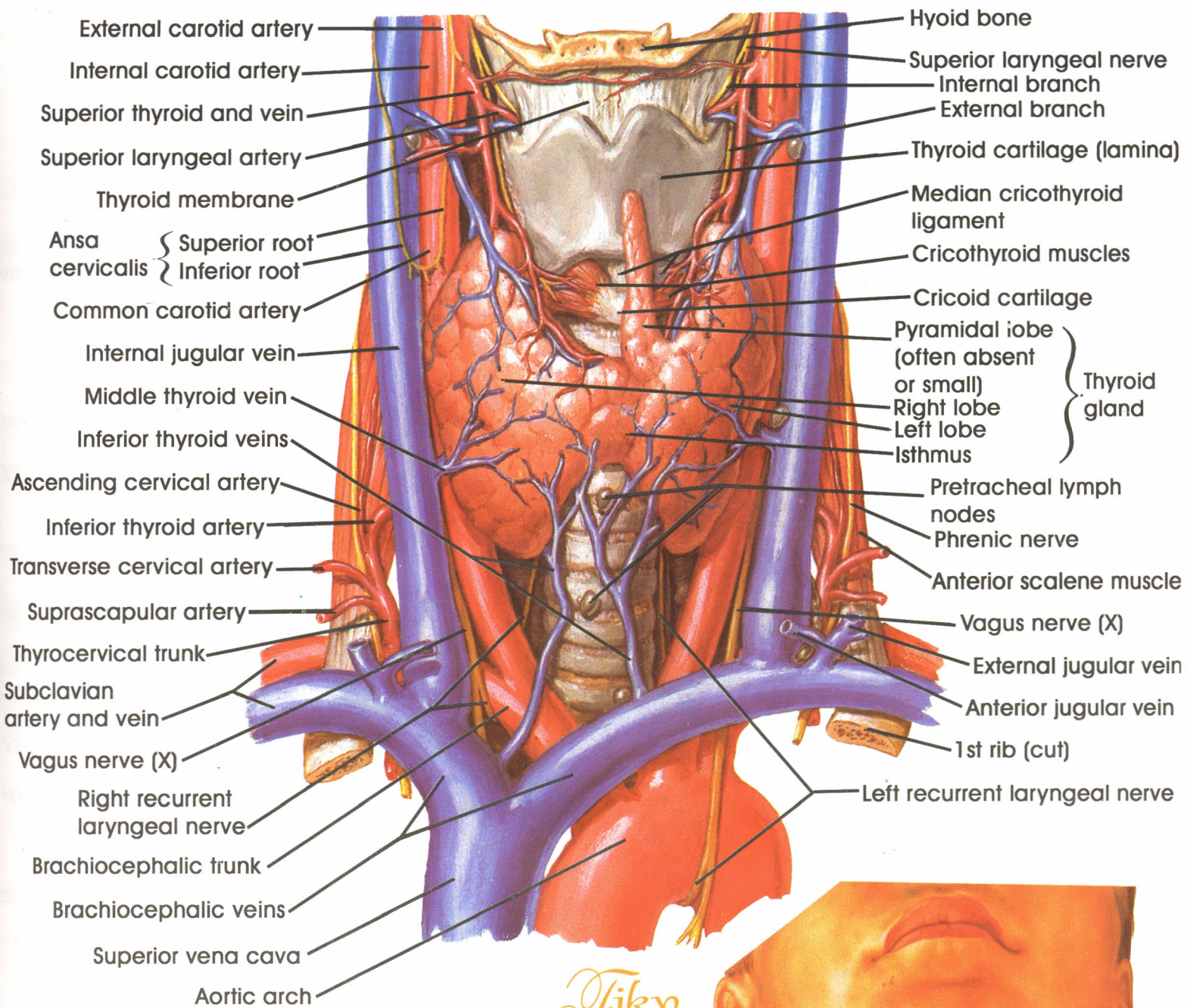


External carotid branches: schema

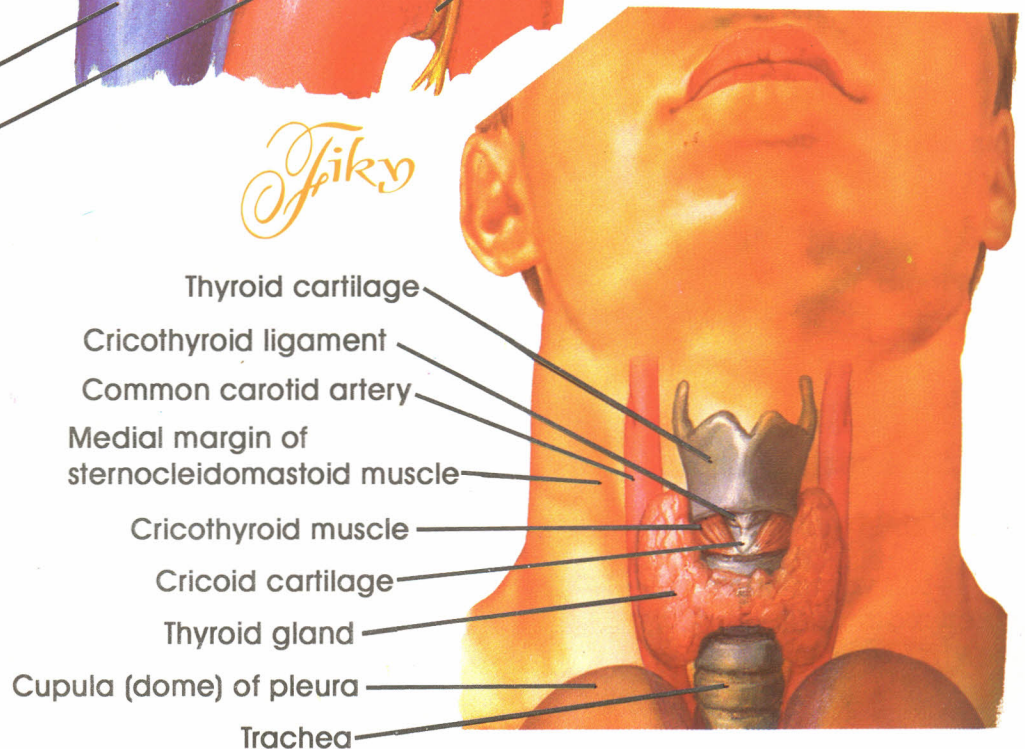
Carotid Arteries



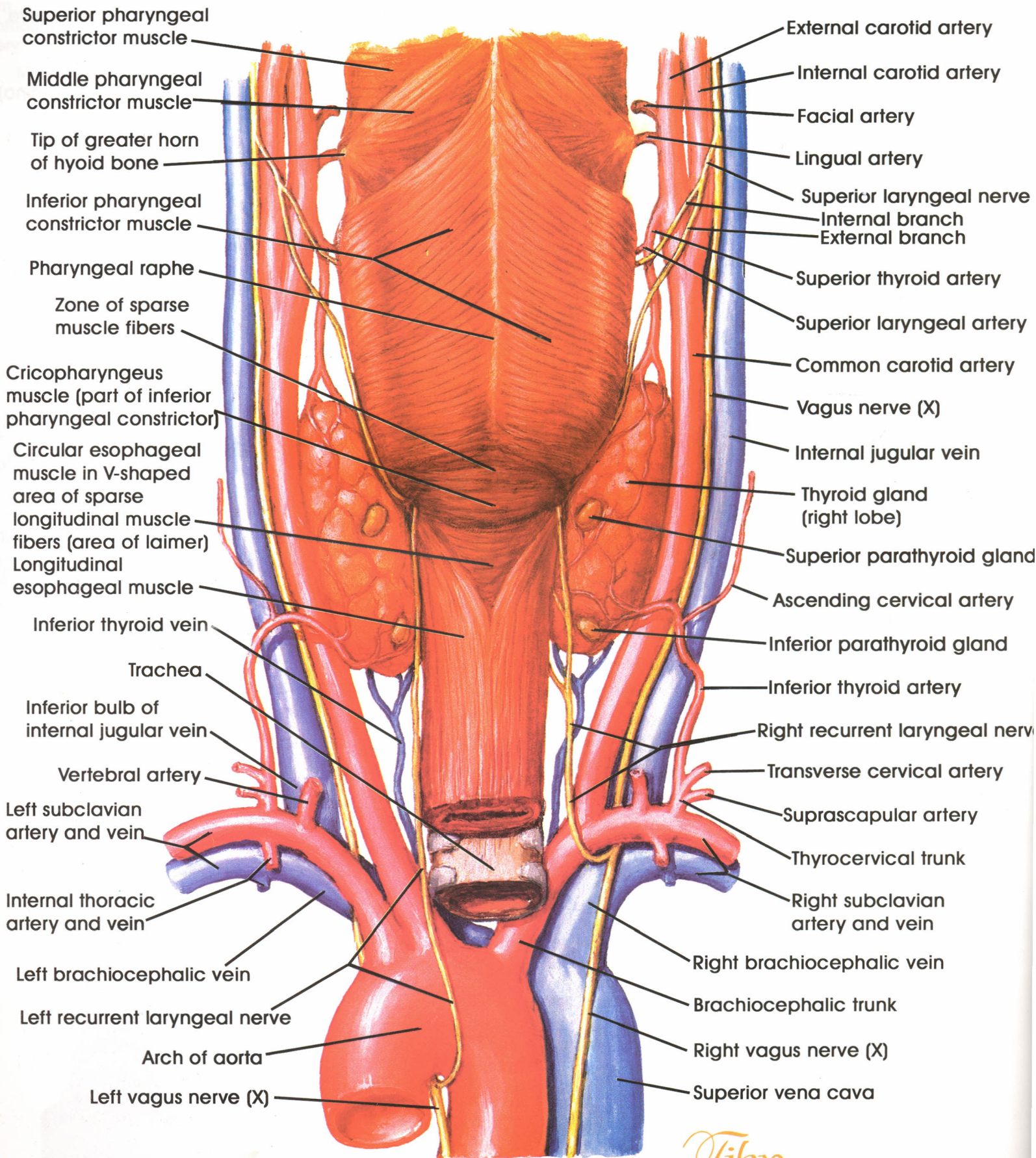
Arteries of the Head and Neck



El-Fiky

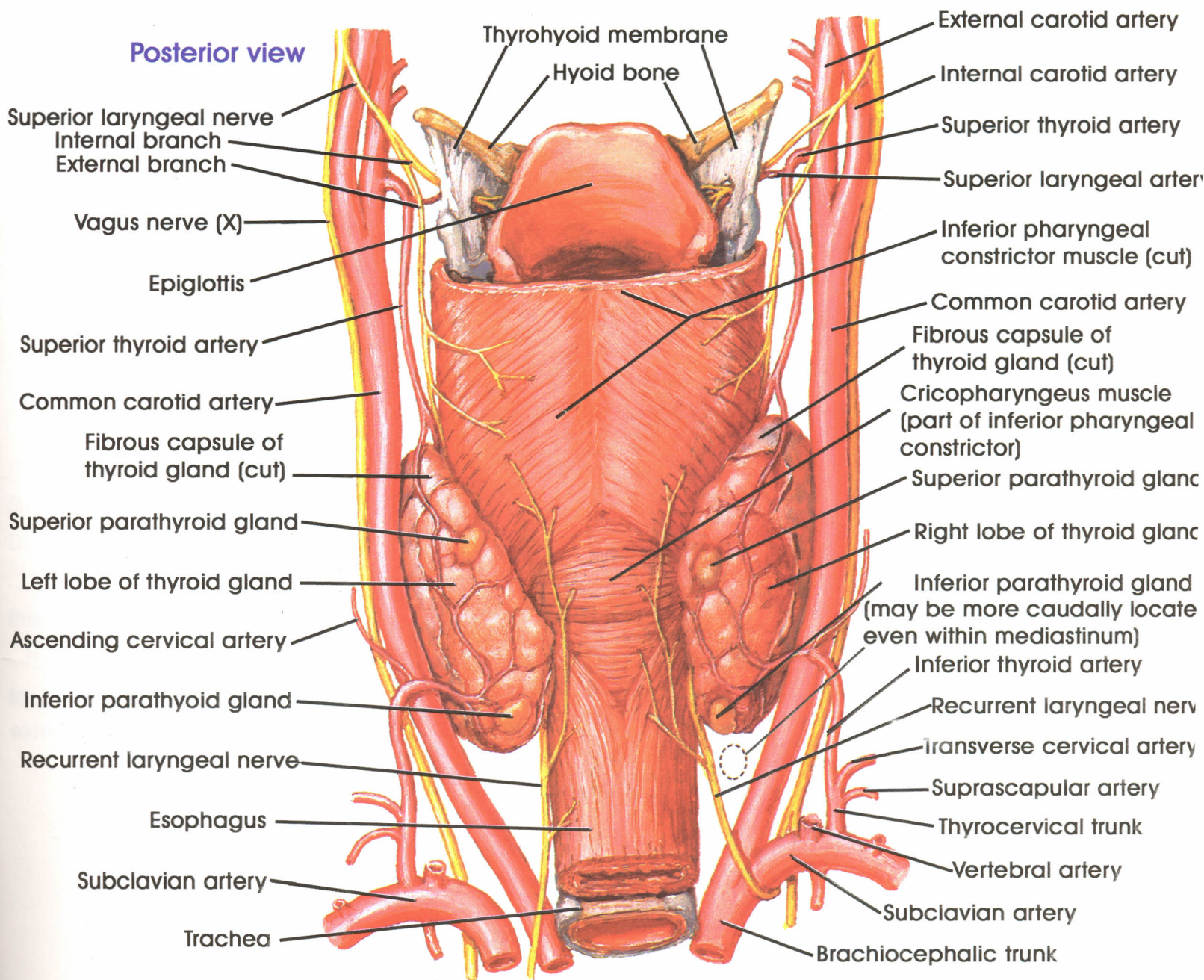


Thyroid Gland : Anterior view

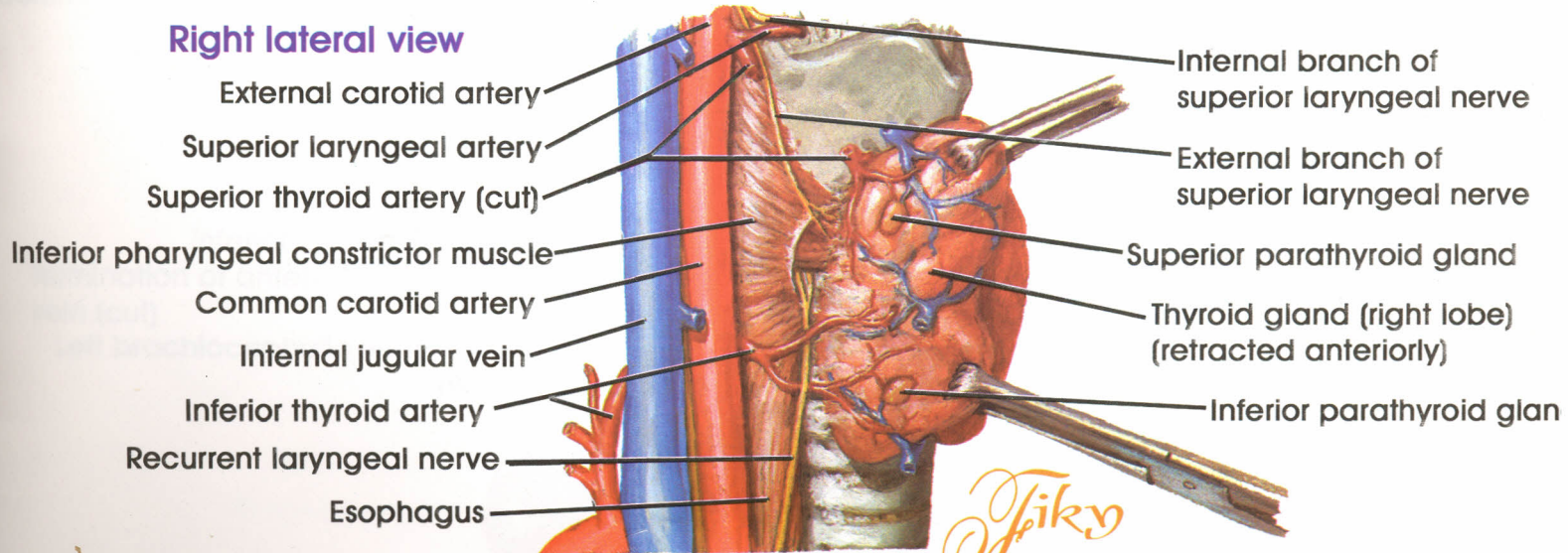


Spiky

Thyroid Gland and Pharynx: Posterior View

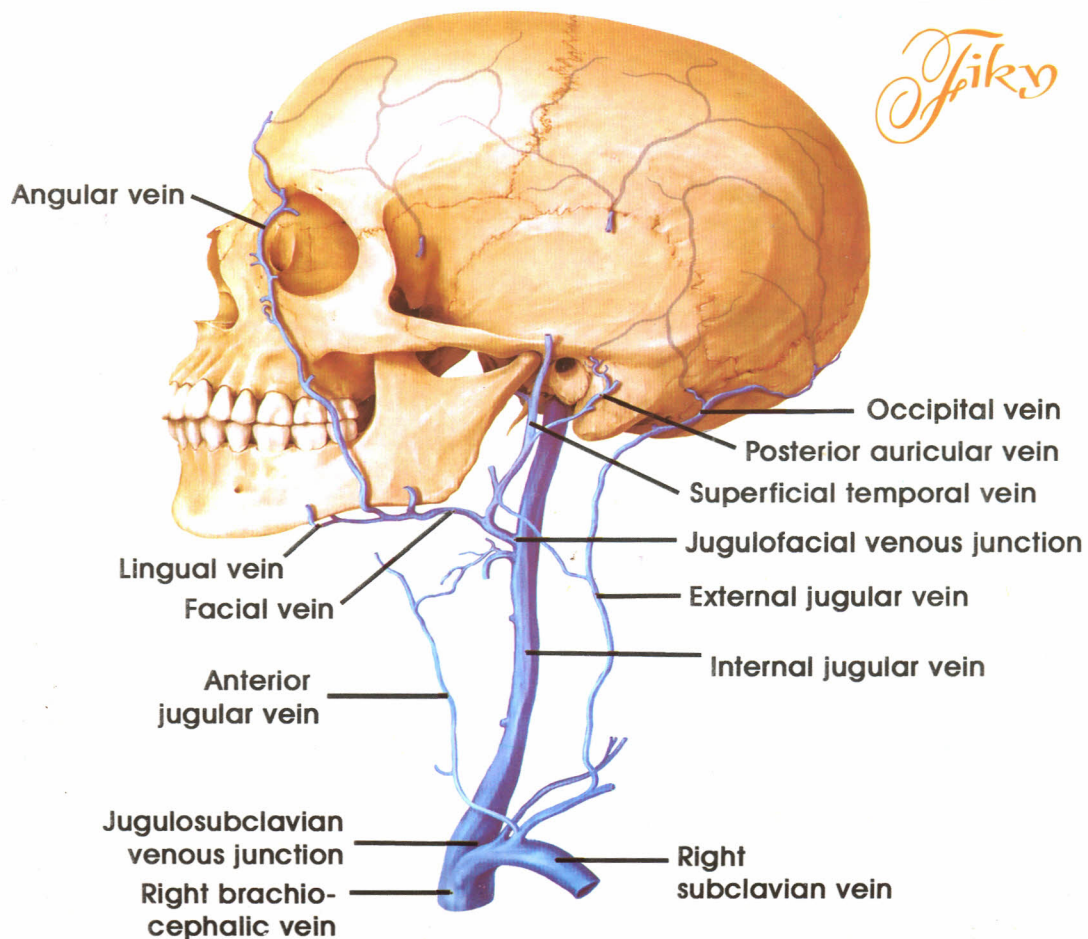
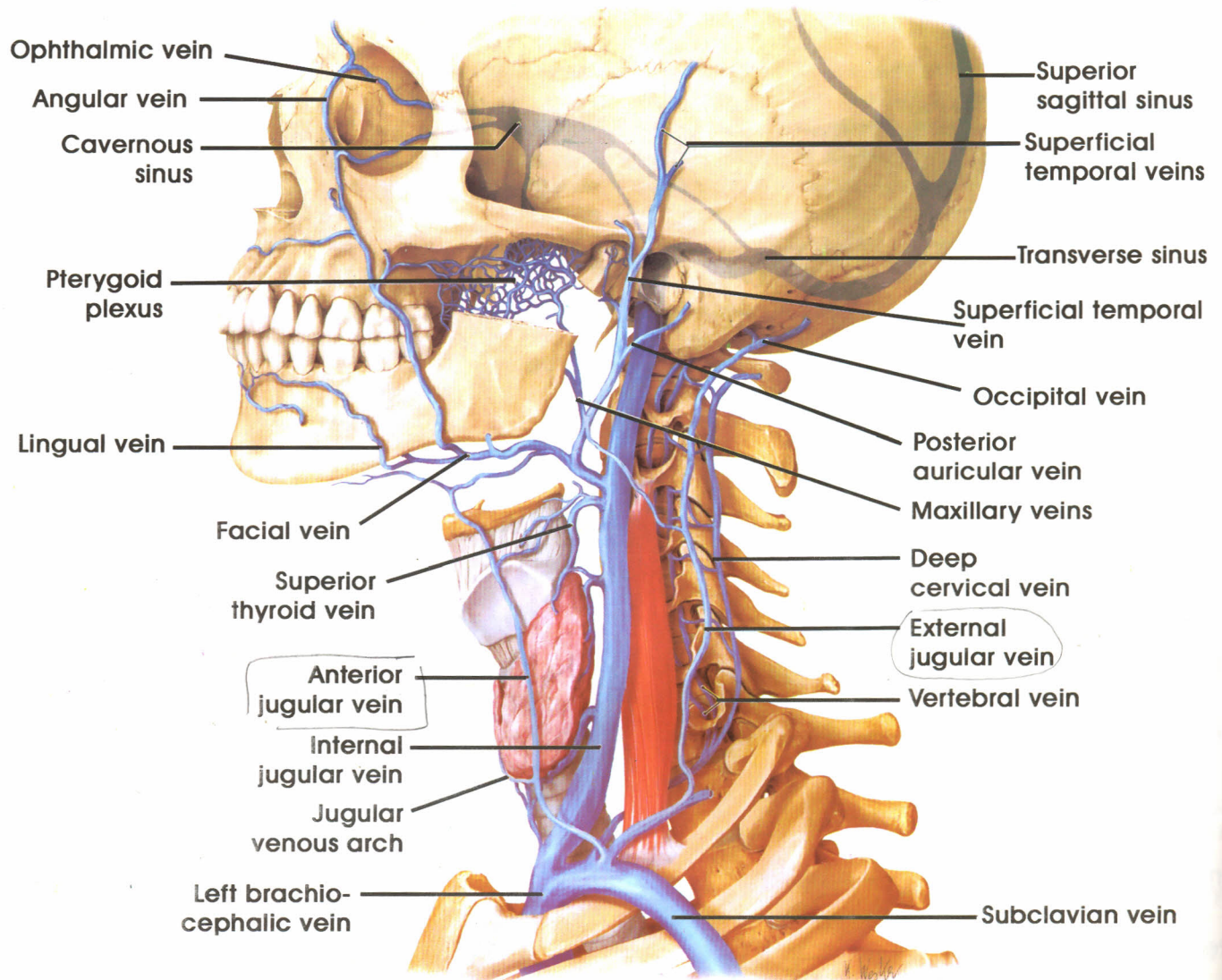


Right lateral view

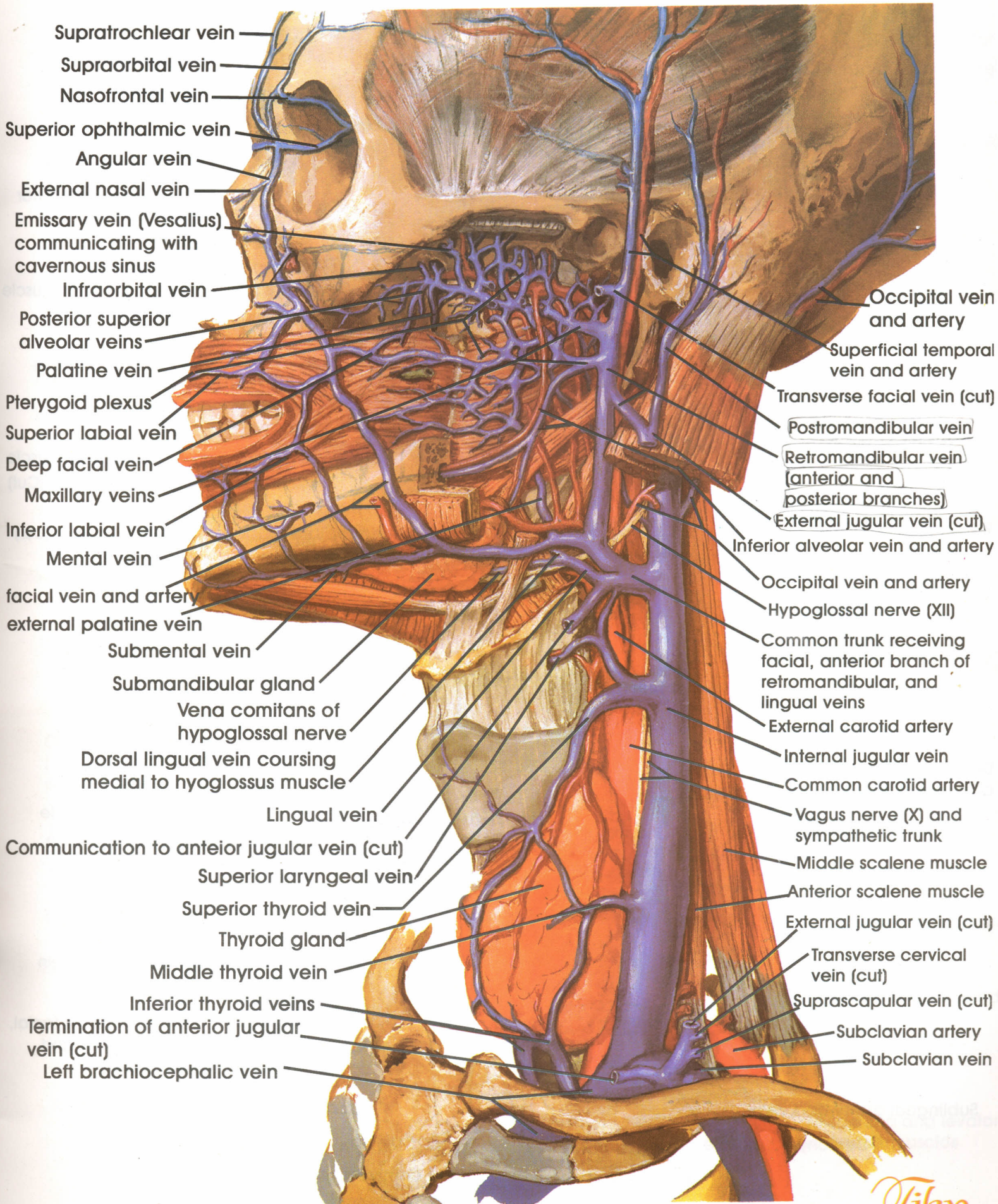


Parathyroid Glands

Jiky

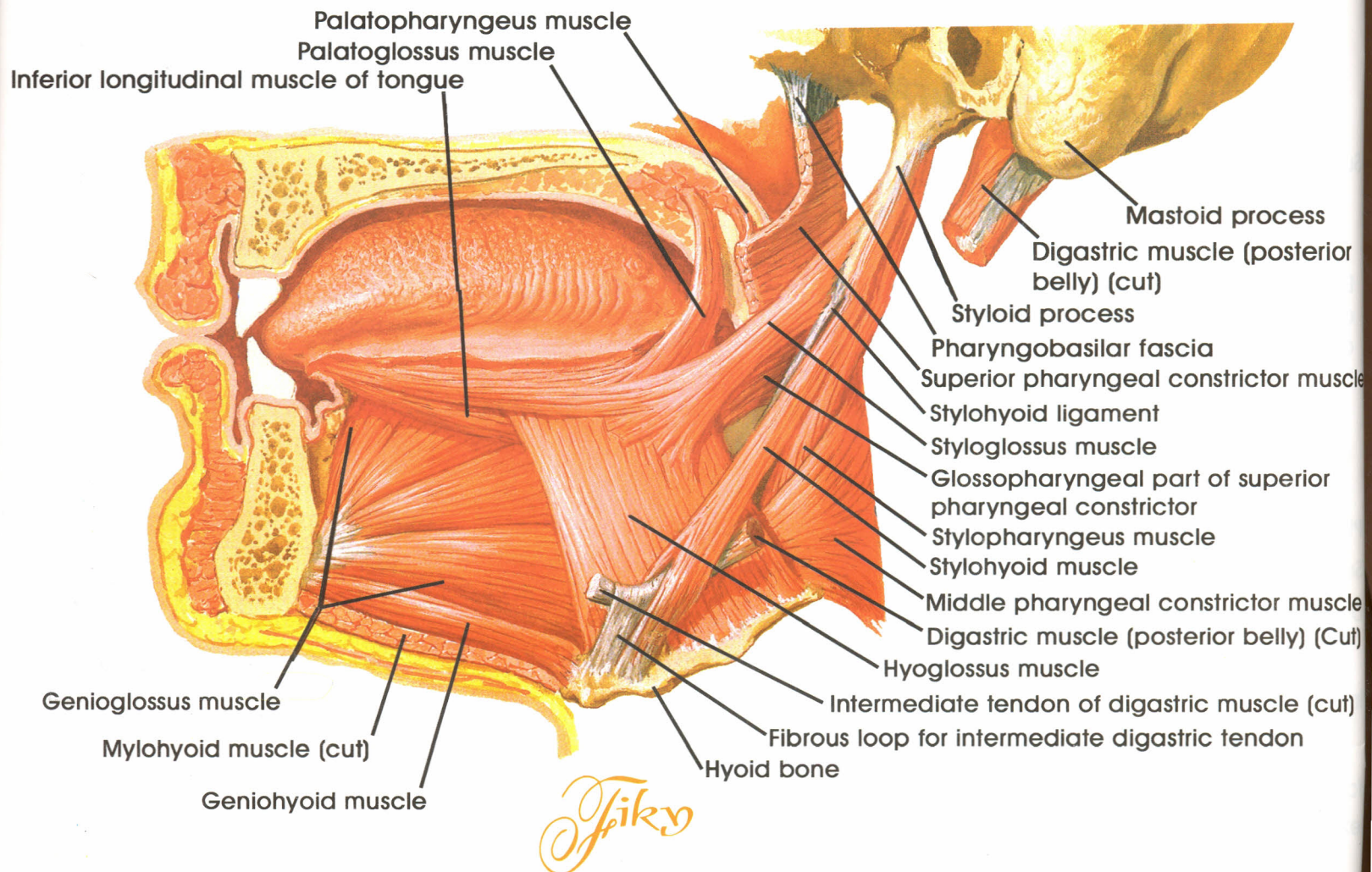


Principal Venous trunks in the Neck

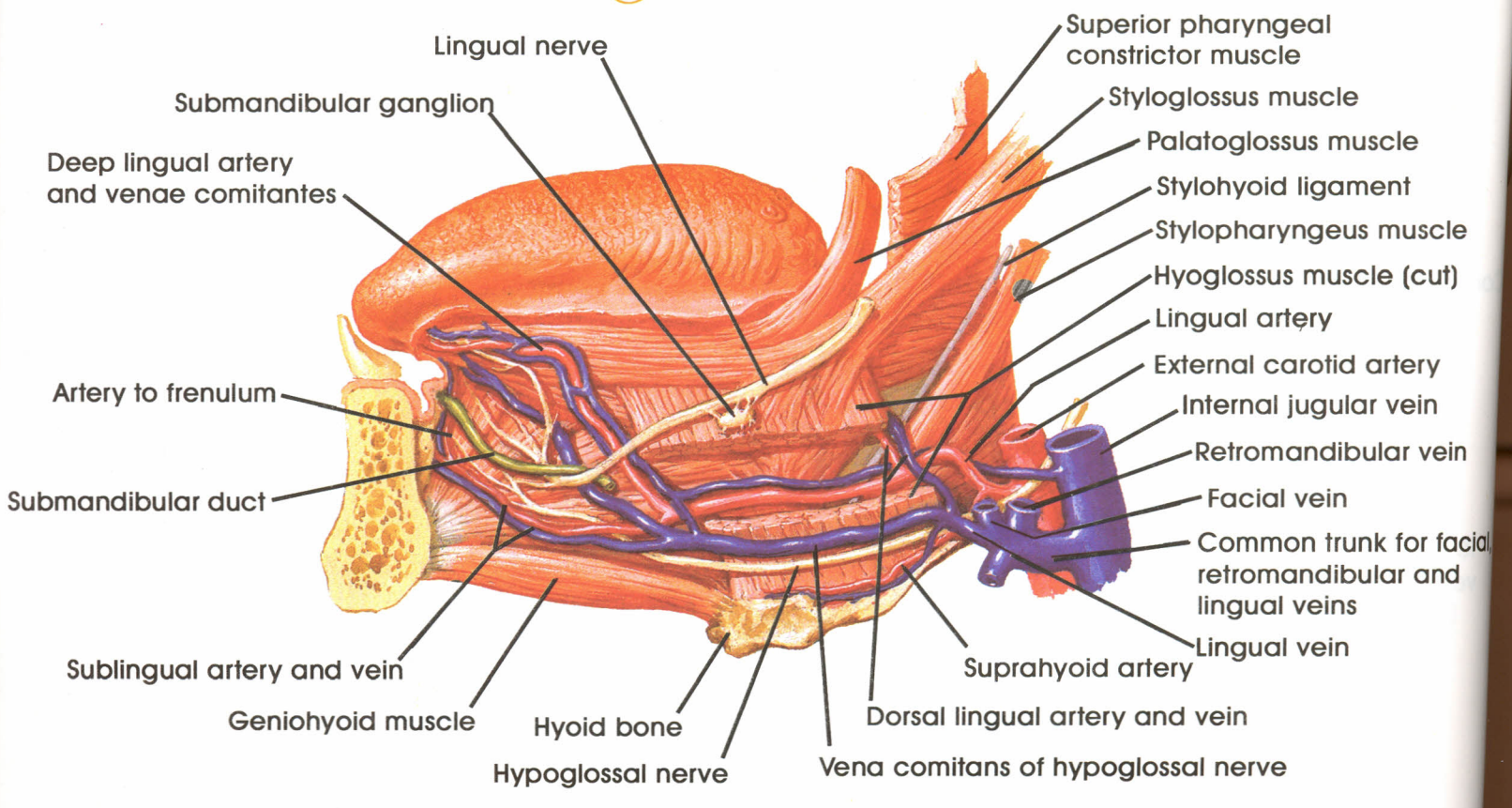


Tricky

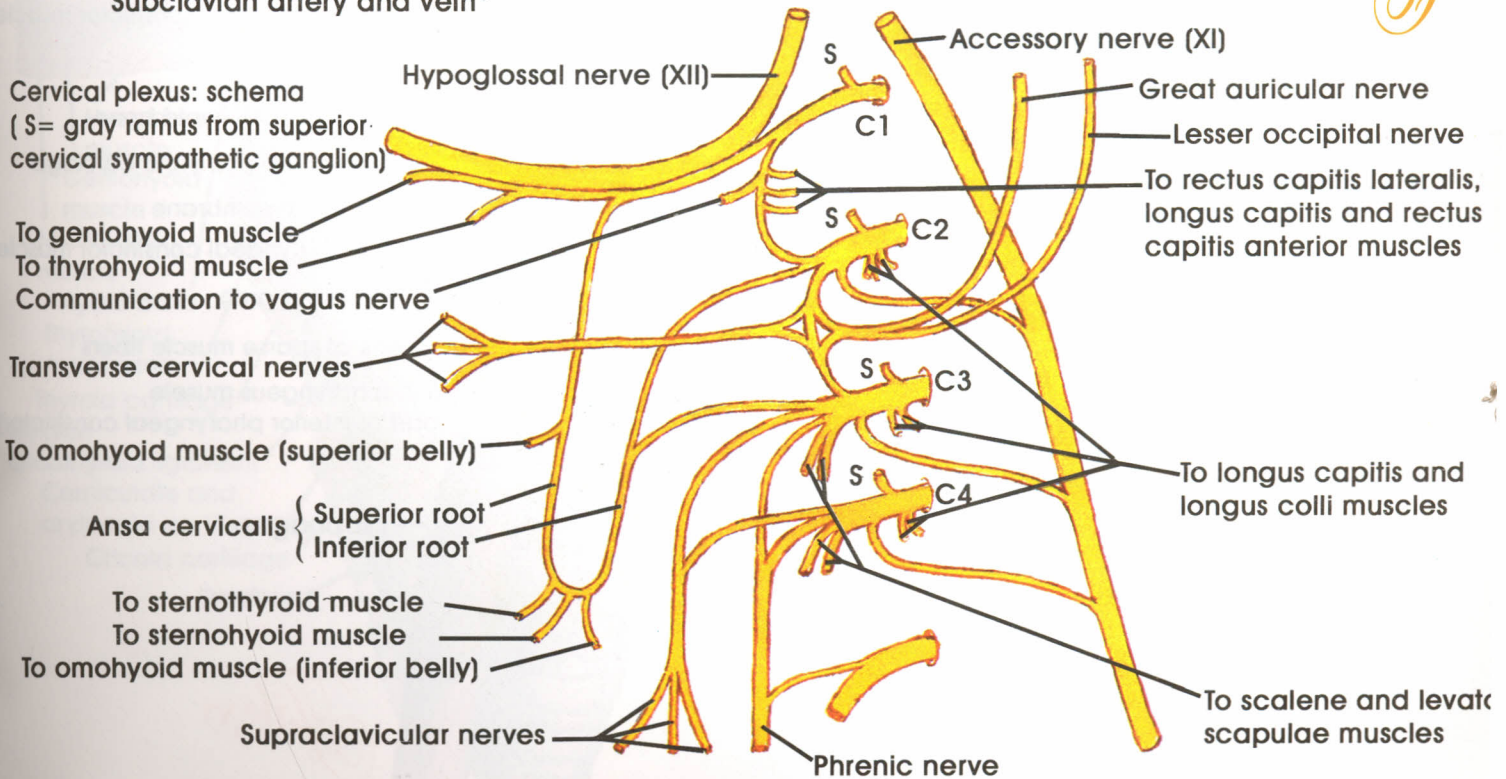
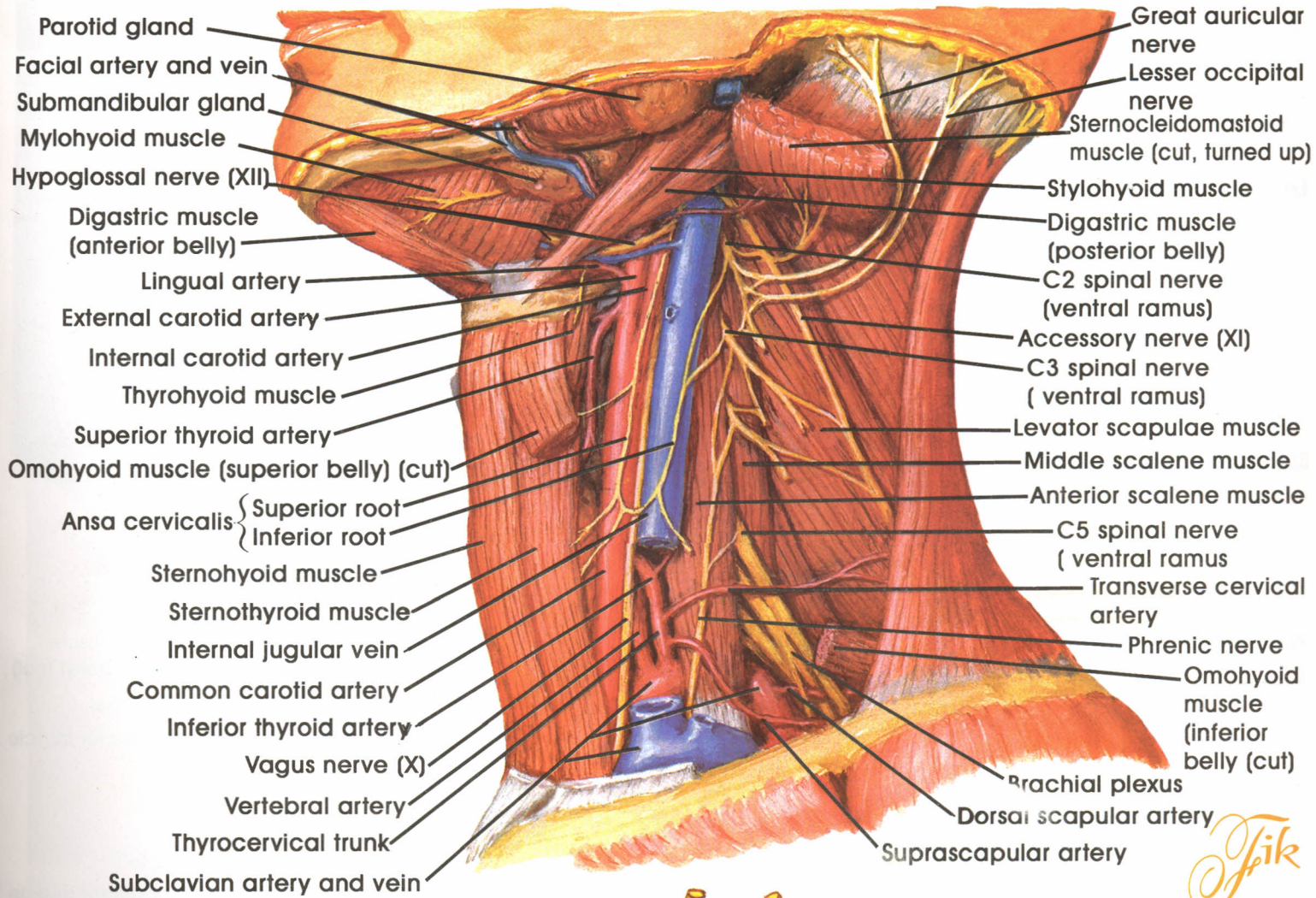
Veins of Oral and Pharyngeal Regions



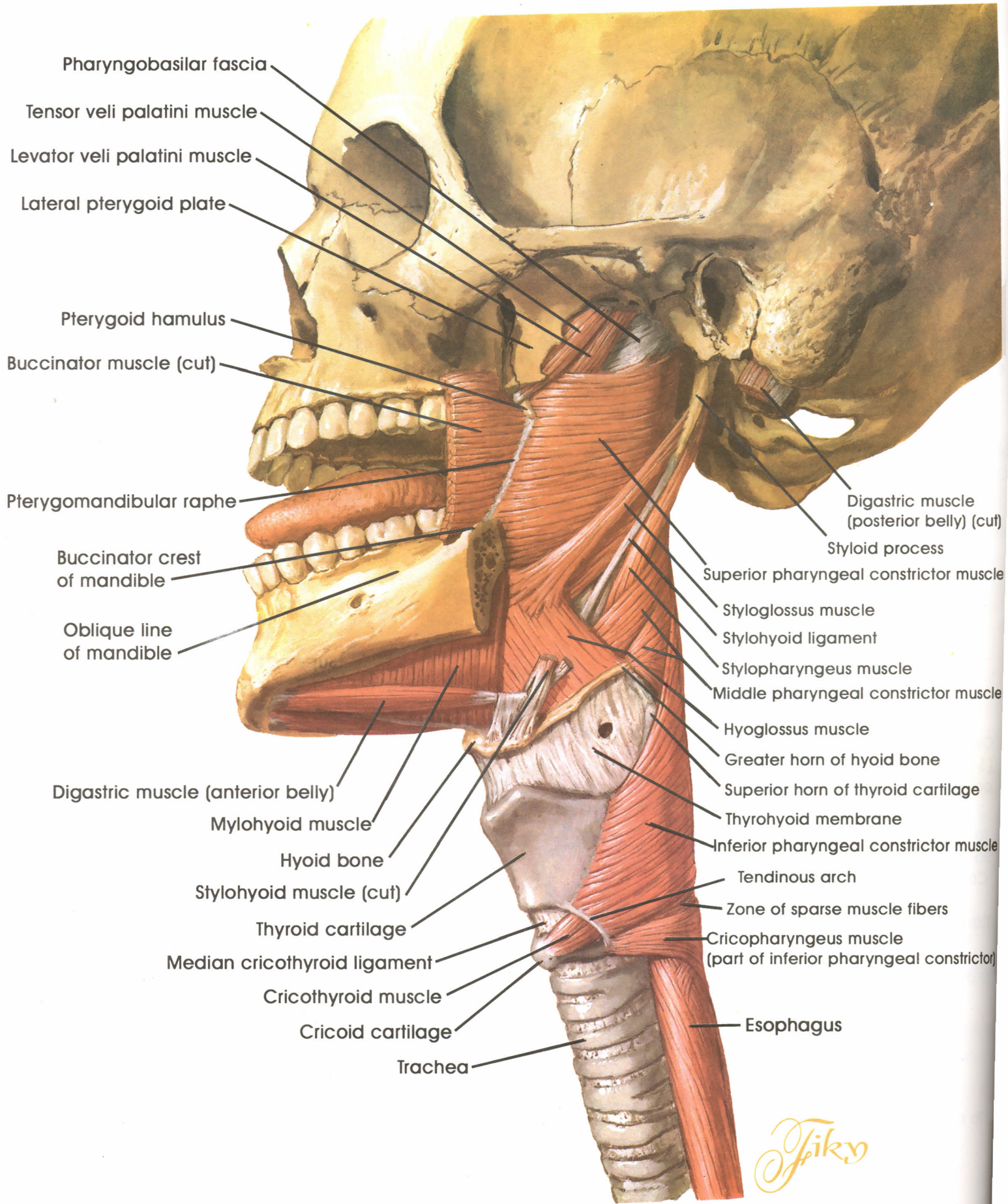
Spiky



Tongue



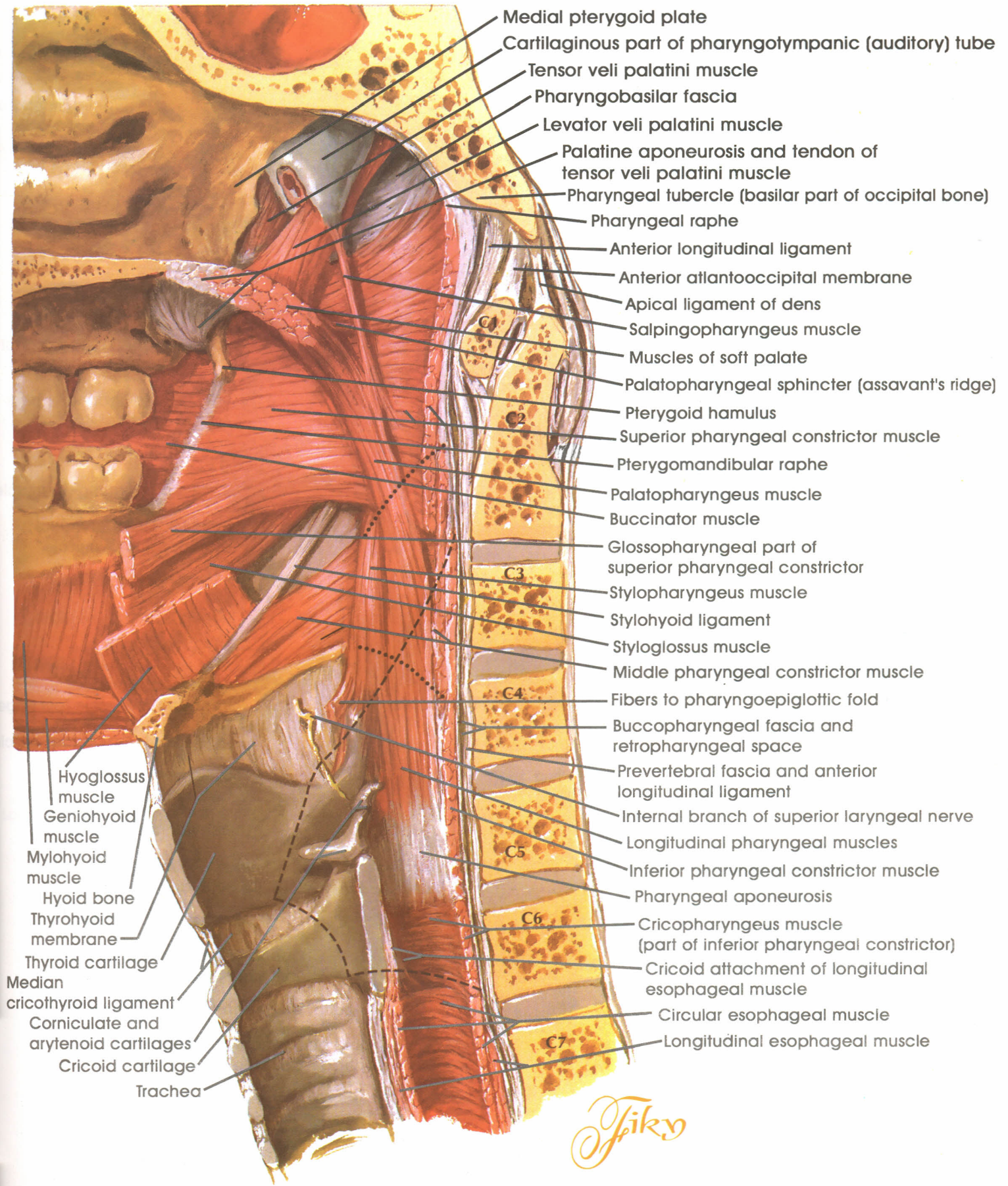
Cervical plexus in situ



- Pharyngobasilar fascia
- Tensor veli palatini muscle
- Levator veli palatini muscle
- Lateral pterygoid plate
- Pterygoid hamulus
- Buccinator muscle (cut)
- Pterygomandibular raphe
- Buccinator crest of mandible
- Oblique line of mandible
- Digastric muscle (anterior belly)
- Mylohyoid muscle
- Hyoid bone
- Stylohyoid muscle (cut)
- Thyroid cartilage
- Median cricothyroid ligament
- Cricothyroid muscle
- Cricoid cartilage
- Trachea
- Digastric muscle (posterior belly) (cut)
- Styloid process
- Superior pharyngeal constrictor muscle
- Styloglossus muscle
- Stylohyoid ligament
- Stylopharyngeus muscle
- Middle pharyngeal constrictor muscle
- Hyoglossus muscle
- Greater horn of hyoid bone
- Superior horn of thyroid cartilage
- Thyrohyoid membrane
- Inferior pharyngeal constrictor muscle
- Tendinous arch
- Zone of sparse muscle fibers
- Cricopharyngeus muscle (part of inferior pharyngeal constrictor)
- Esophagus



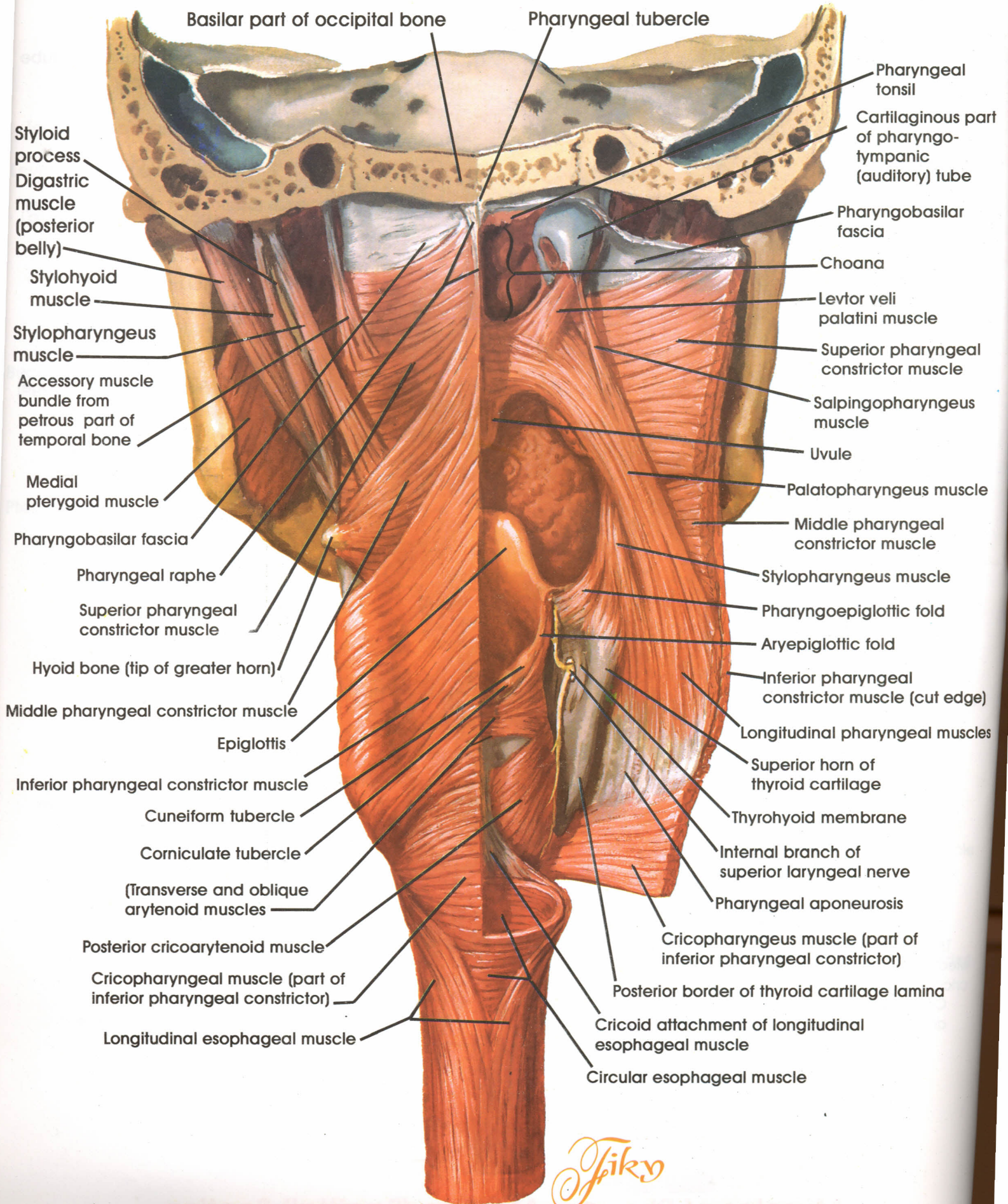
Muscles of Pharynx: Lateral View



- Medial pterygoid plate
- Cartilaginous part of pharyngotympanic (auditory) tube
- Tensor veli palatini muscle
- Pharyngobasilar fascia
- Levator veli palatini muscle
- Palatine aponeurosis and tendon of tensor veli palatini muscle
- Pharyngeal tubercle (basilar part of occipital bone)
- Pharyngeal raphe
- Anterior longitudinal ligament
- Anterior atlantooccipital membrane
- Apical ligament of dens
- Salpingopharyngeus muscle
- Muscles of soft palate
- Palatopharyngeal sphincter (assavant's ridge)
- Pterygoid hamulus
- Superior pharyngeal constrictor muscle
- Pterygomandibular raphe
- Palatopharyngeus muscle
- Buccinator muscle
- Glossopharyngeal part of superior pharyngeal constrictor
- Stylopharyngeus muscle
- Stylohyoid ligament
- Styloglossus muscle
- Middle pharyngeal constrictor muscle
- Fibers to pharyngoepiglottic fold
- Buccopharyngeal fascia and retropharyngeal space
- Prevertebral fascia and anterior longitudinal ligament
- Internal branch of superior laryngeal nerve
- Longitudinal pharyngeal muscles
- Inferior pharyngeal constrictor muscle
- Pharyngeal aponeurosis
- Cricopharyngeus muscle (part of inferior pharyngeal constrictor)
- Cricoid attachment of longitudinal esophageal muscle
- Circular esophageal muscle
- Longitudinal esophageal muscle

- Hyoglossus muscle
- Geniohyoid muscle
- Mylohyoid muscle
- Hyoid bone
- Thyrohyoid membrane
- Thyroid cartilage
- Median cricothyroid ligament
- Corniculate and arytenoid cartilages
- Cricoid cartilage
- Trachea

Muscles of Pharynx: Median (Sagittal) Section



Basilar part of occipital bone

Pharyngeal tubercle

Pharyngeal tonsil

Cartilaginous part of pharyngotympanic (auditory) tube

Styloid process
Digastric muscle (posterior belly)

Pharyngobasilar fascia

Choana

Stylohyoid muscle

Levator veli palatini muscle

Stylopharyngeus muscle

Superior pharyngeal constrictor muscle

Accessory muscle bundle from petrous part of temporal bone

Salpingopharyngeus muscle

Medial pterygoid muscle

Uvule

Palatopharyngeus muscle

Pharyngobasilar fascia

Middle pharyngeal constrictor muscle

Pharyngeal raphe

Stylopharyngeus muscle

Superior pharyngeal constrictor muscle

Pharyngoepiglottic fold

Aryepiglottic fold

Hyoid bone (tip of greater horn)

Inferior pharyngeal constrictor muscle (cut edge)

Middle pharyngeal constrictor muscle

Longitudinal pharyngeal muscles

Epiglottis

Superior horn of thyroid cartilage

Inferior pharyngeal constrictor muscle

Cuneiform tubercle

Thyrohyoid membrane

Corniculate tubercle

Internal branch of superior laryngeal nerve

(Transverse and oblique arytenoid muscles)

Pharyngeal aponeurosis

Posterior cricoarytenoid muscle

Cricopharyngeus muscle (part of inferior pharyngeal constrictor)

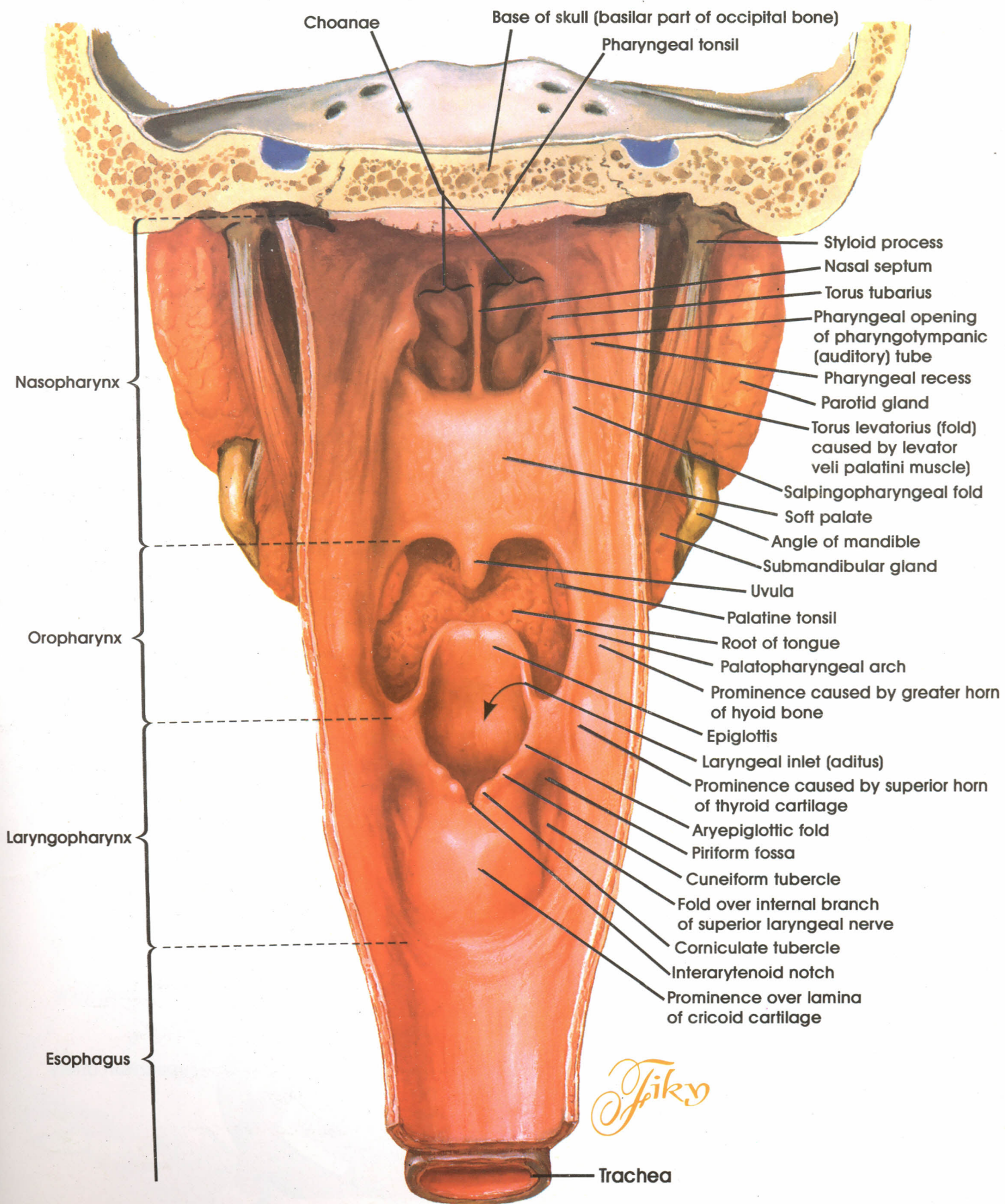
Cricopharyngeal muscle (part of inferior pharyngeal constrictor)

Posterior border of thyroid cartilage lamina

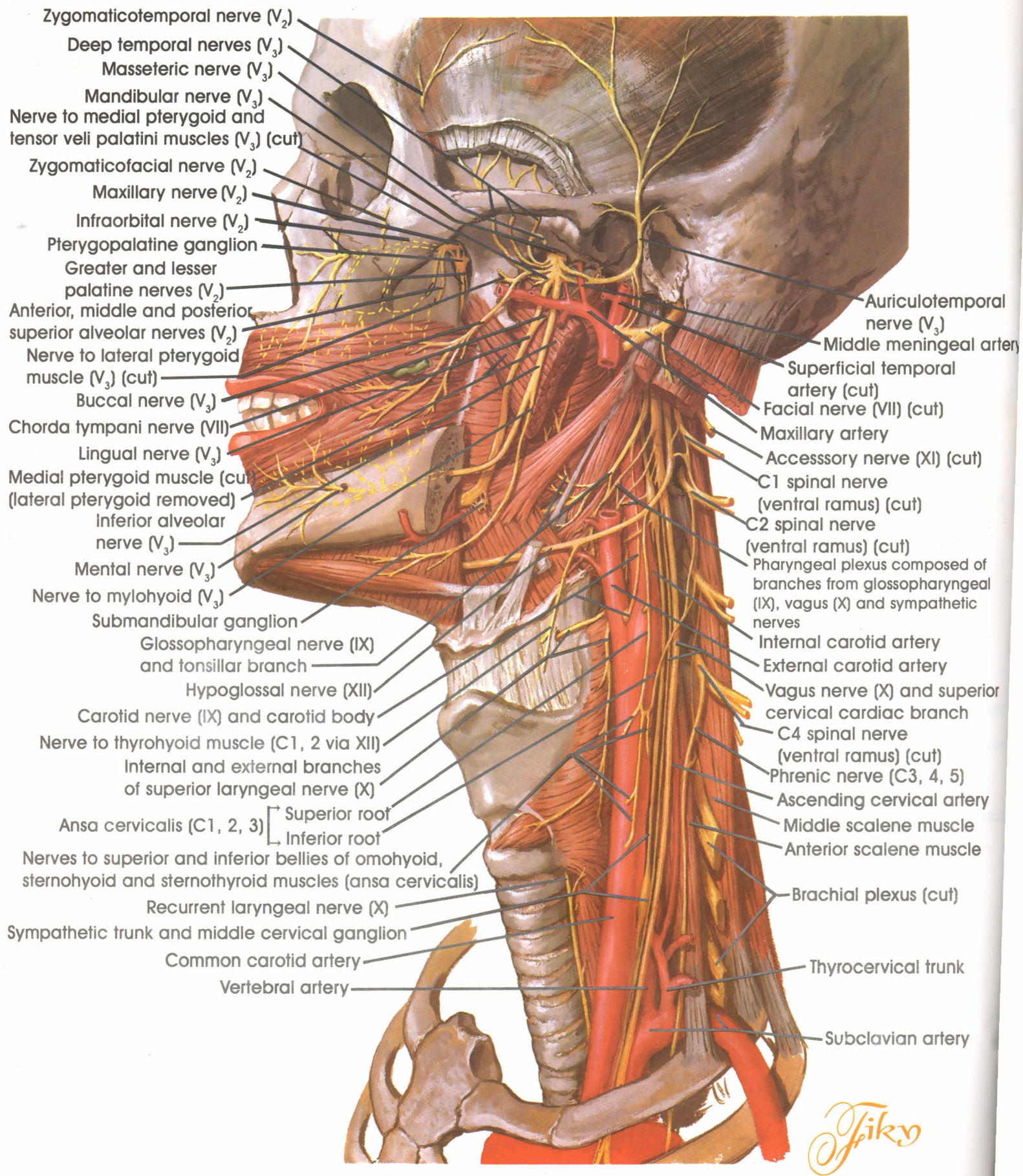
Longitudinal esophageal muscle

Cricoid attachment of longitudinal esophageal muscle

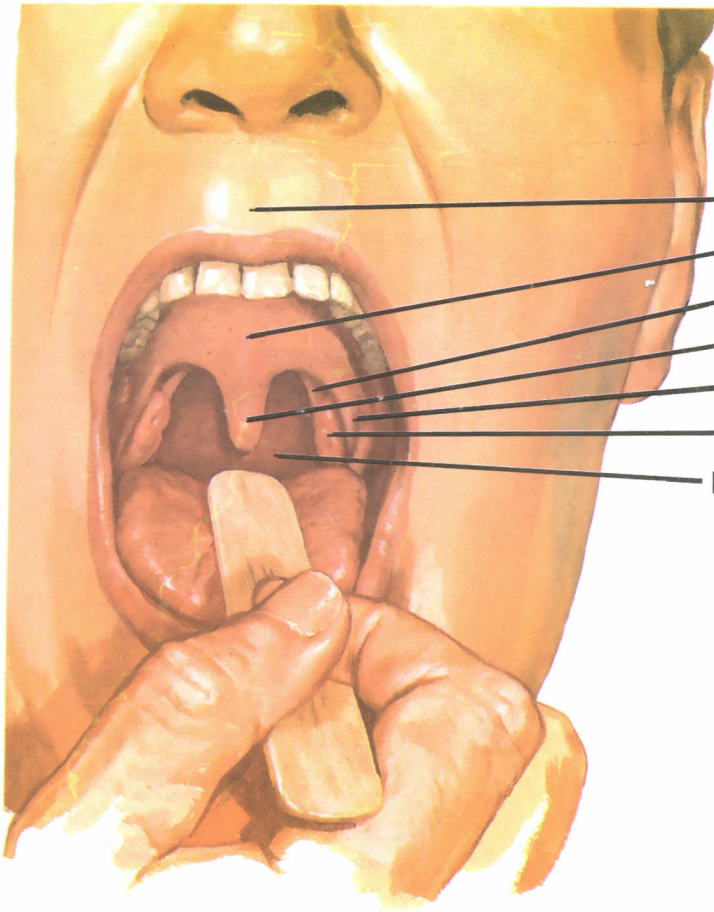
Circular esophageal muscle



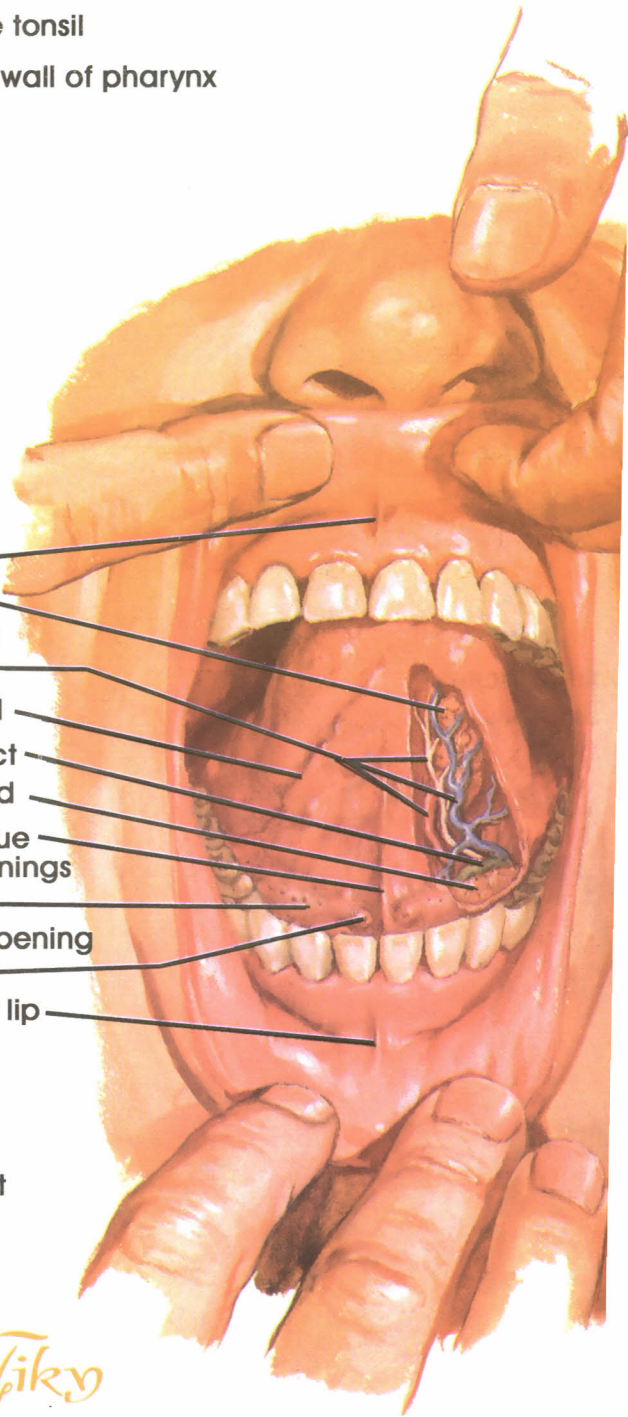
Pharynx: Opened Posterior View



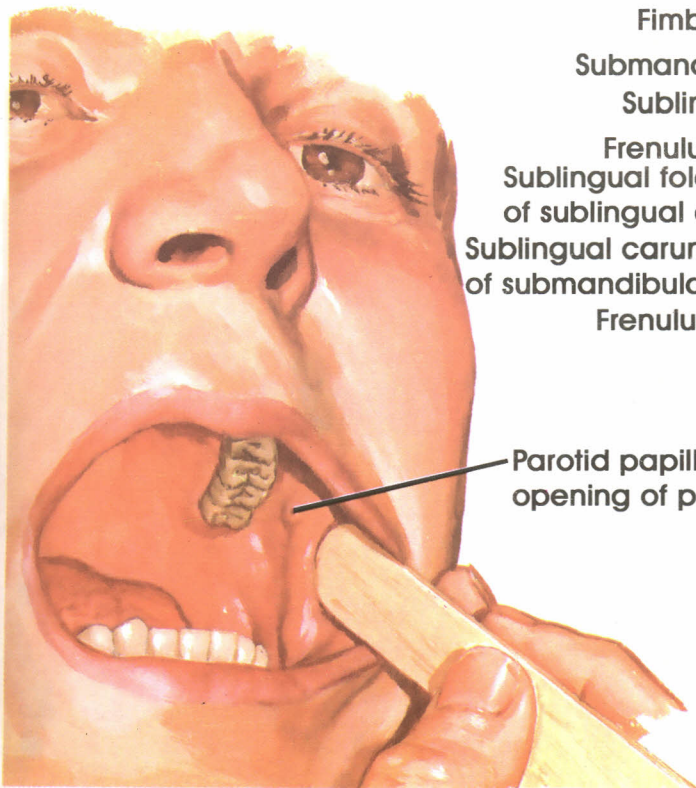
Nerves of Oral and Pharyngeal Regions



- Philtrum of lip
- Soft palate
- Palatopharyngeal arch
- Uvula
- Palatoglossal arch
- Palatine tonsil
- Posterior wall of pharynx



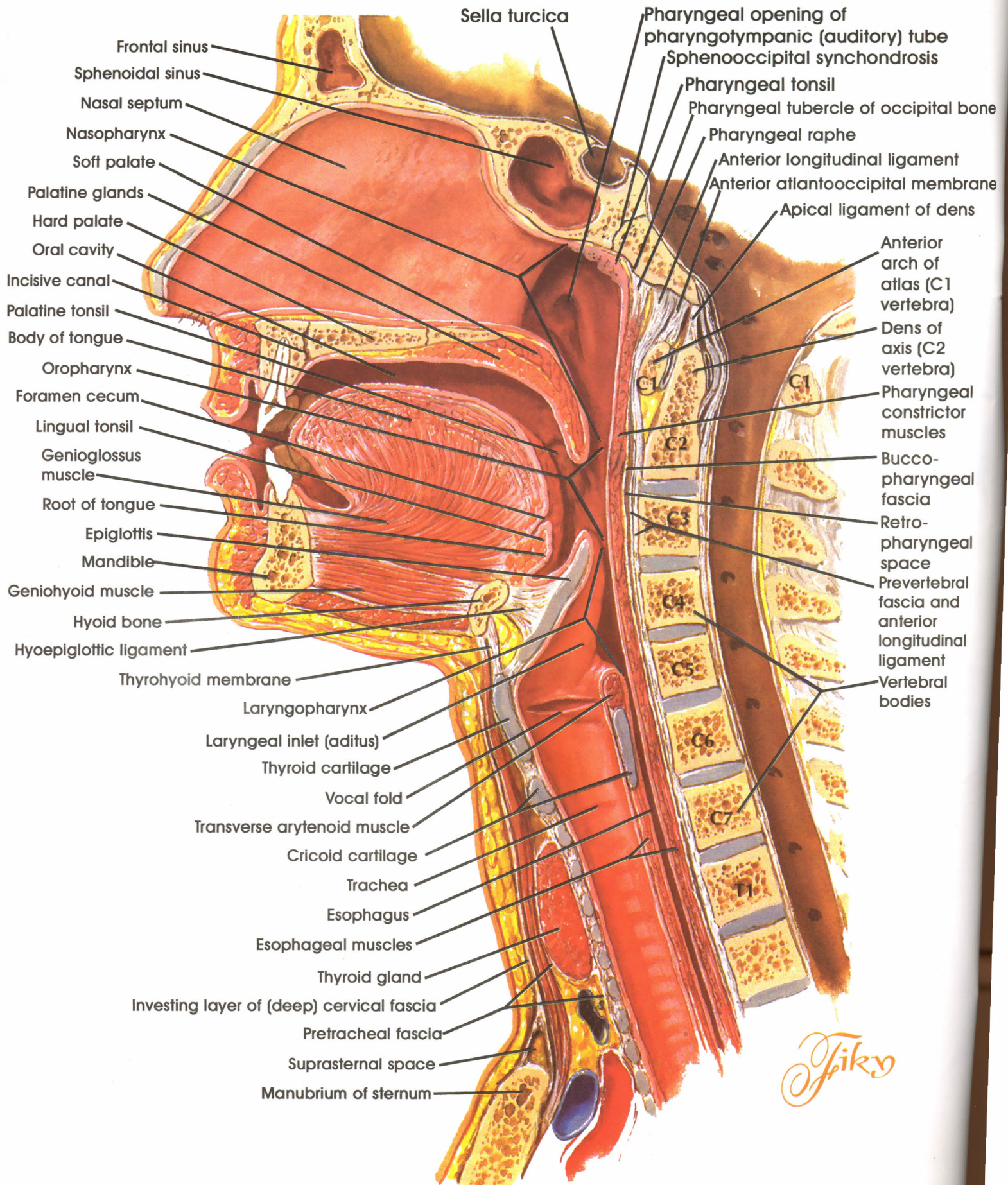
- Frenulum of upper lip
- Lingual minor salivary gland
- Deep lingual artery and veins and lingual nerve
- Fimbriated fold
- Submandibular duct
- Sublingual gland
- Frenulum of tongue
- Sublingual fold with openings of sublingual ducts
- Sublingual caruncle with opening of submandibular duct
- Frenulum of lower lip



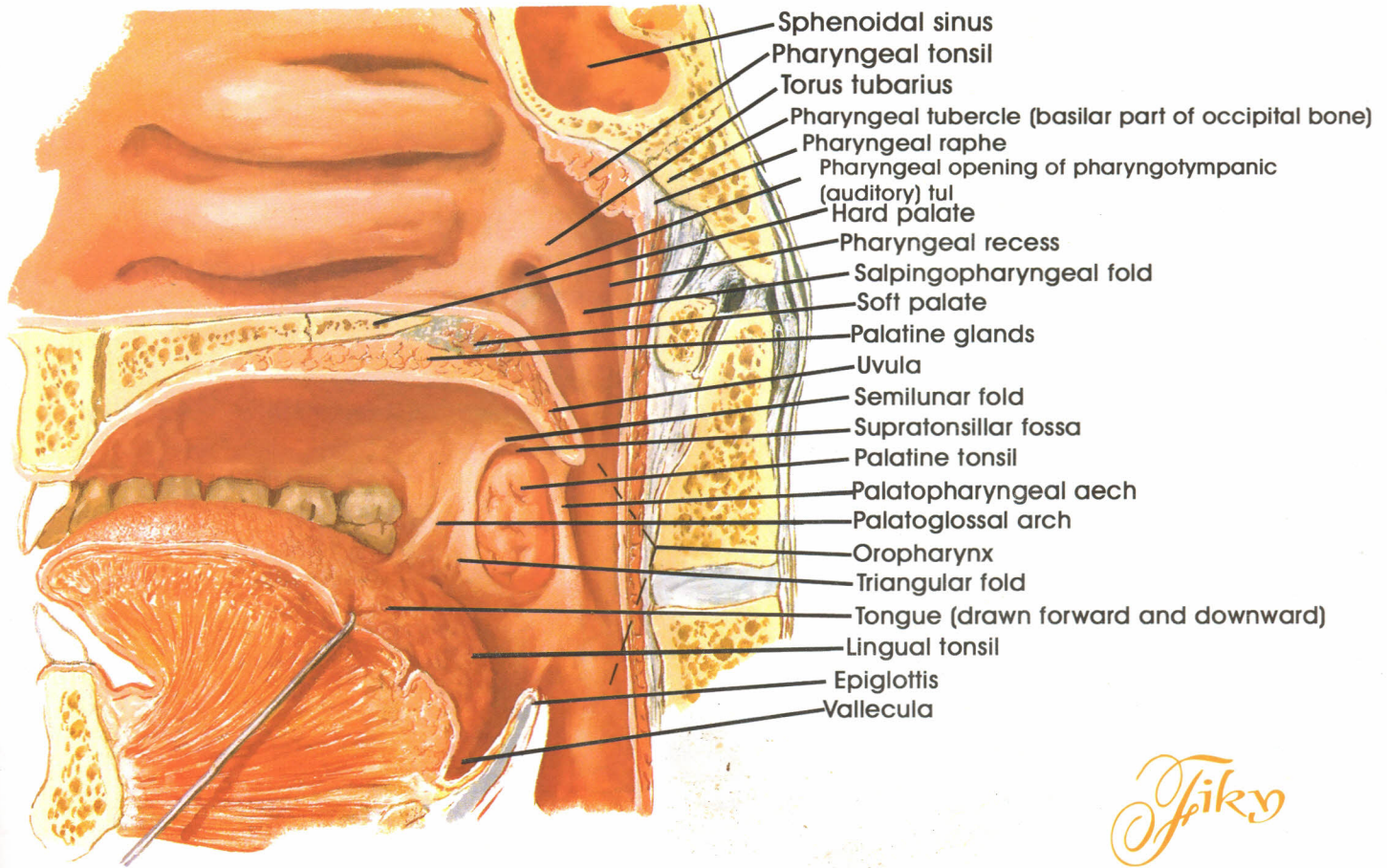
- Parotid papilla with opening of parotid duct

Spiky

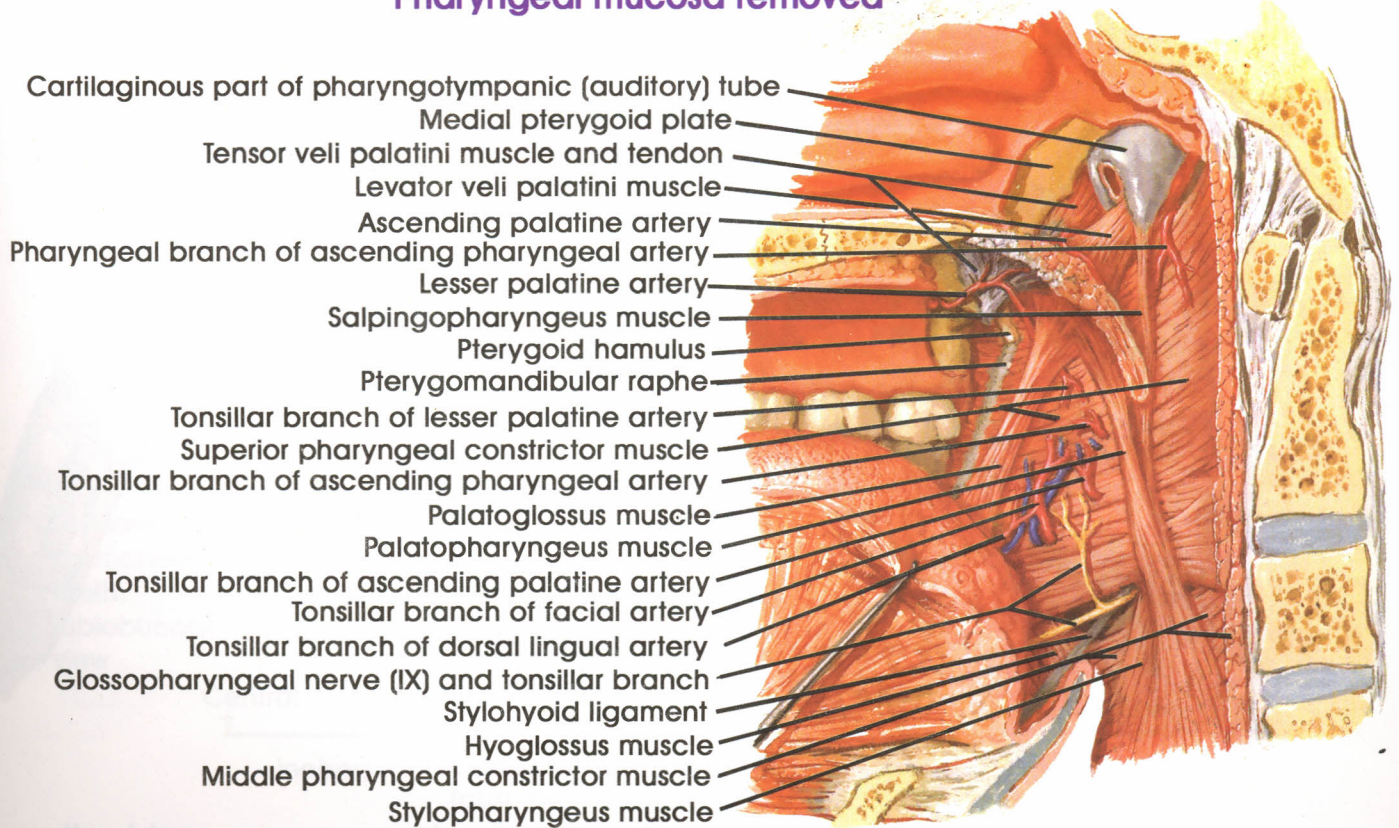
Inspection of Oral Cavity



Pharynx: Median Section



Pharyngeal mucosa removed

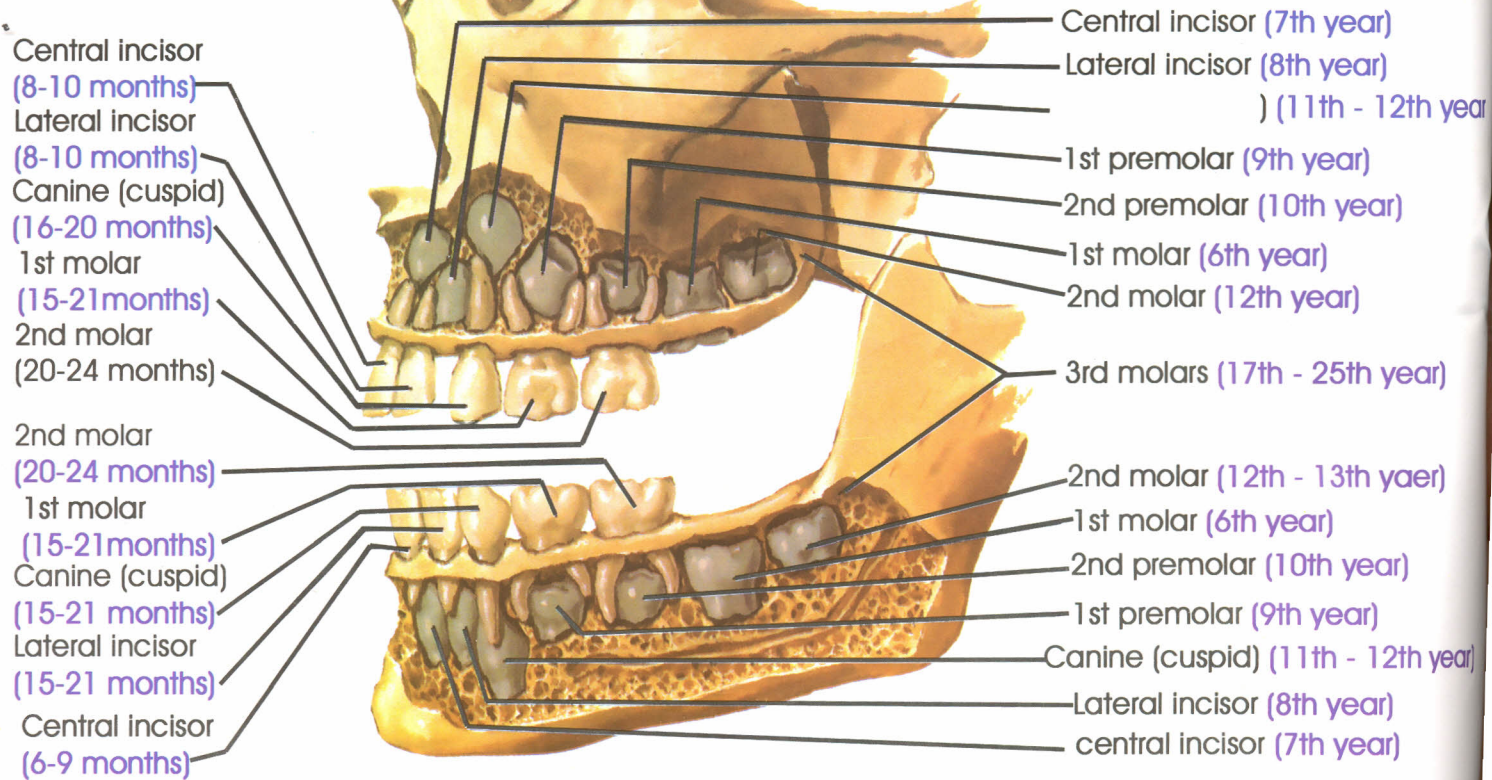


Fauces

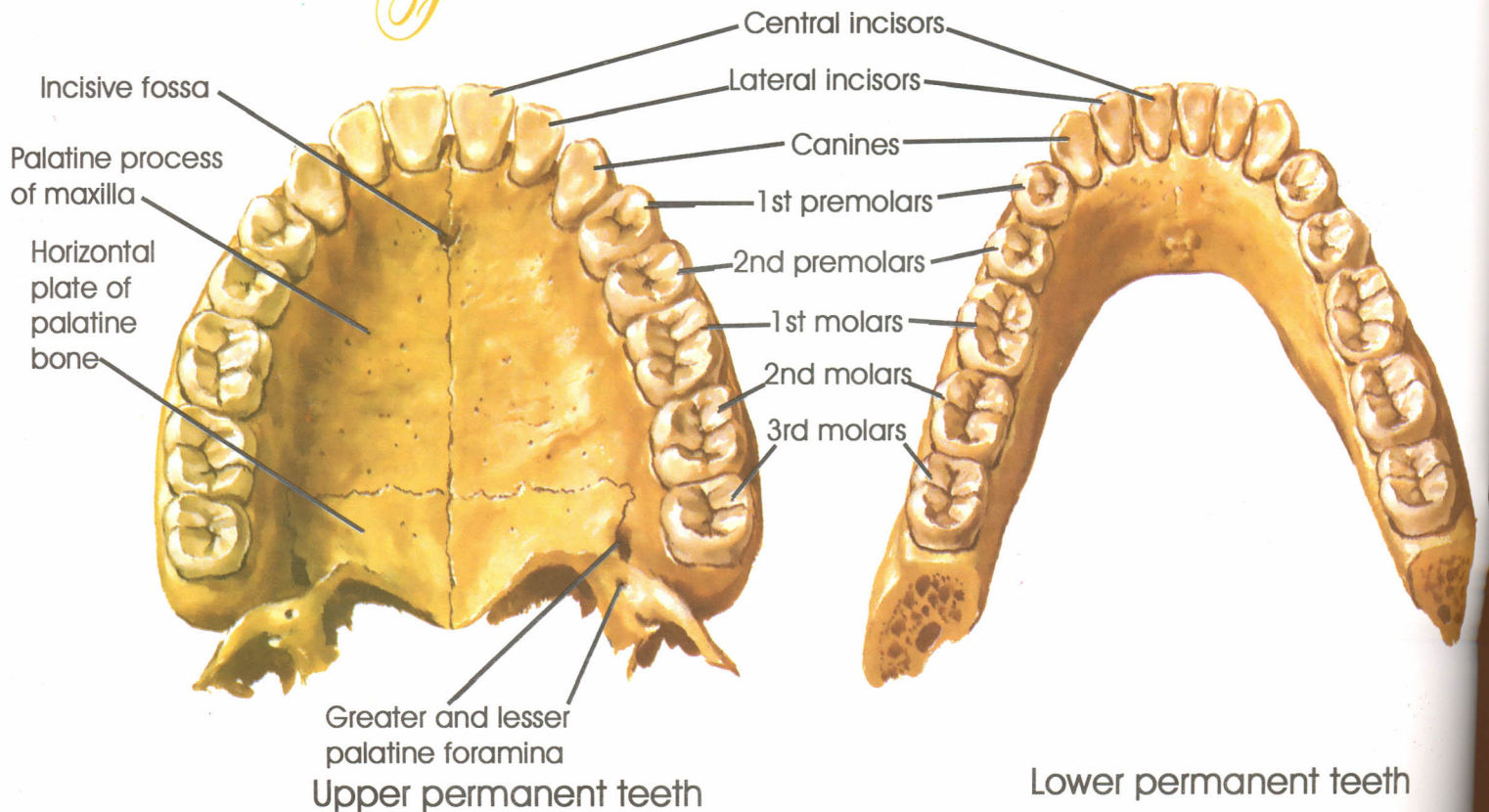


Deciduous
(primary)
Usual age of eruption

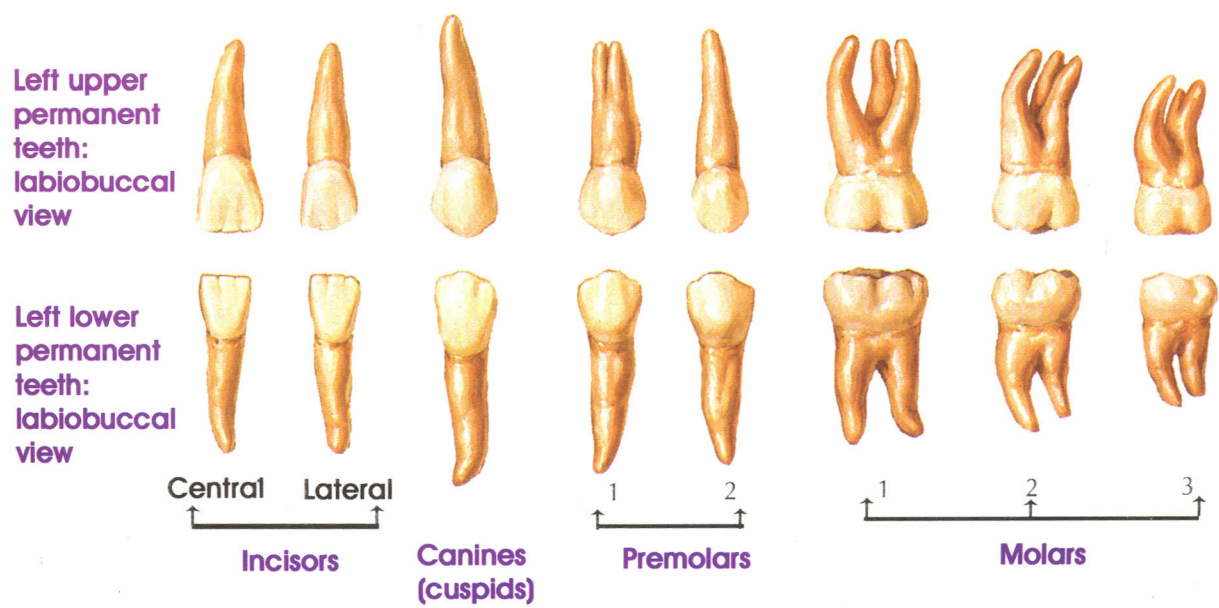
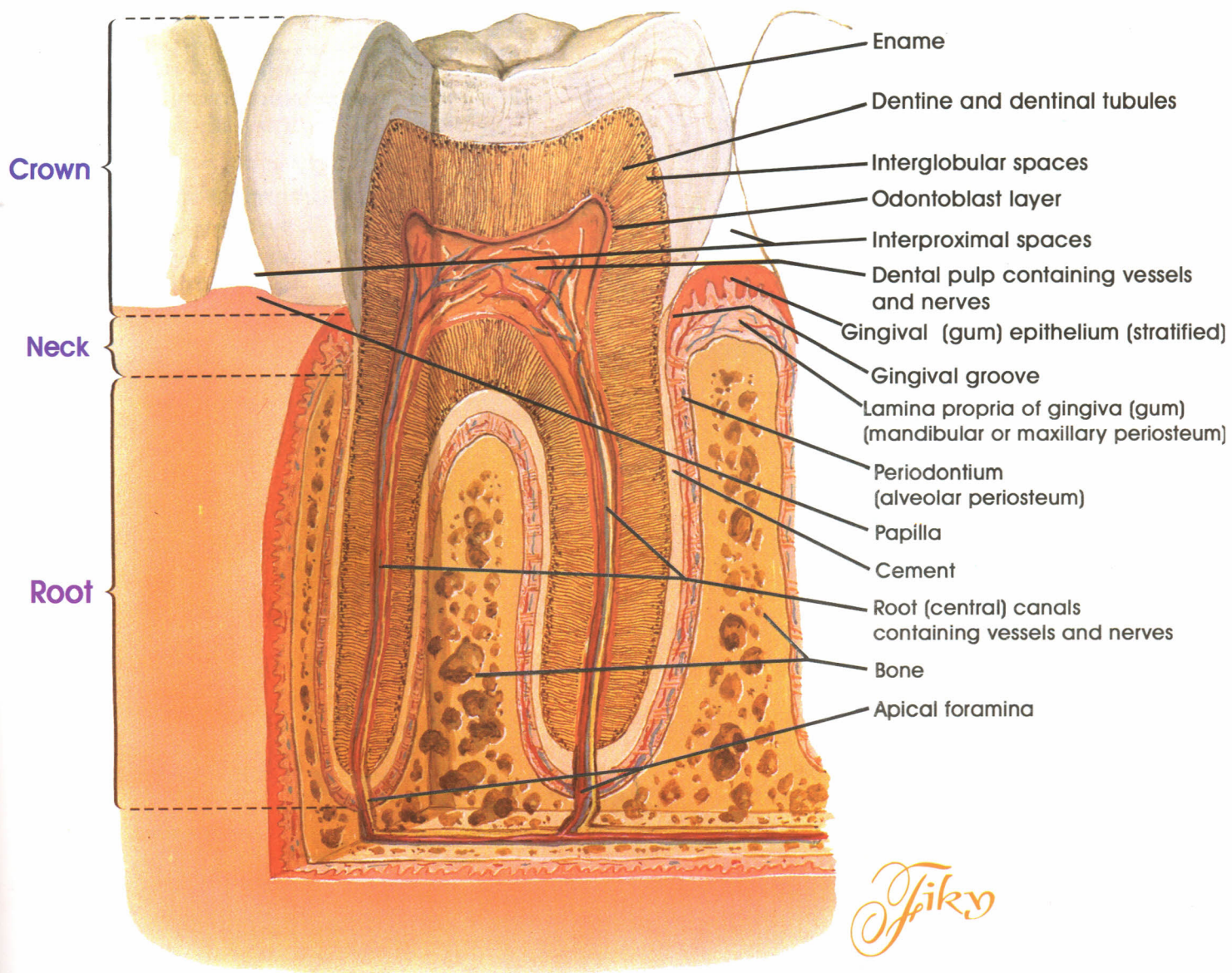
Permanent
(colored blue)
Usual age of eruption



Spiky

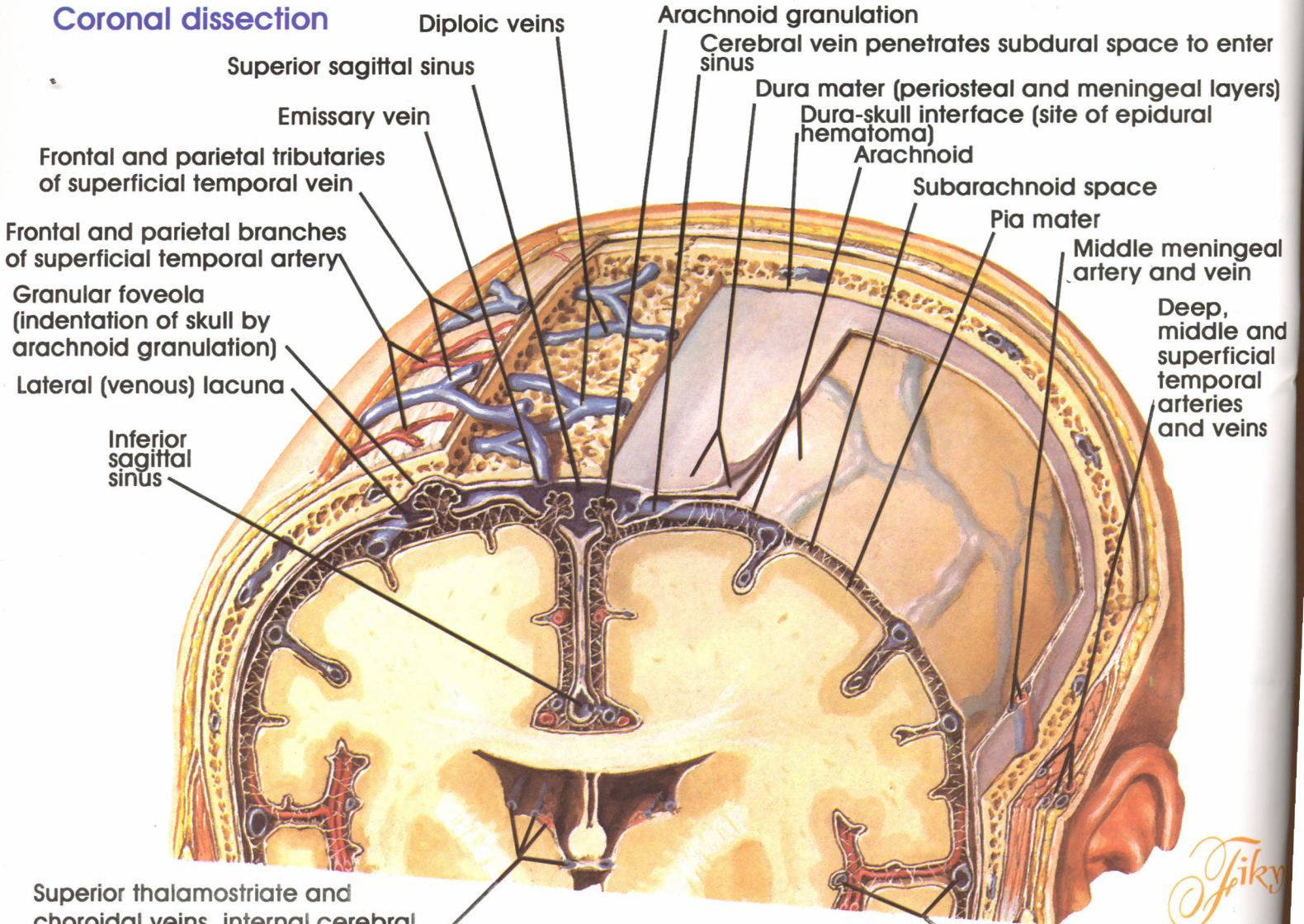


Teeth



Teeth (continued)

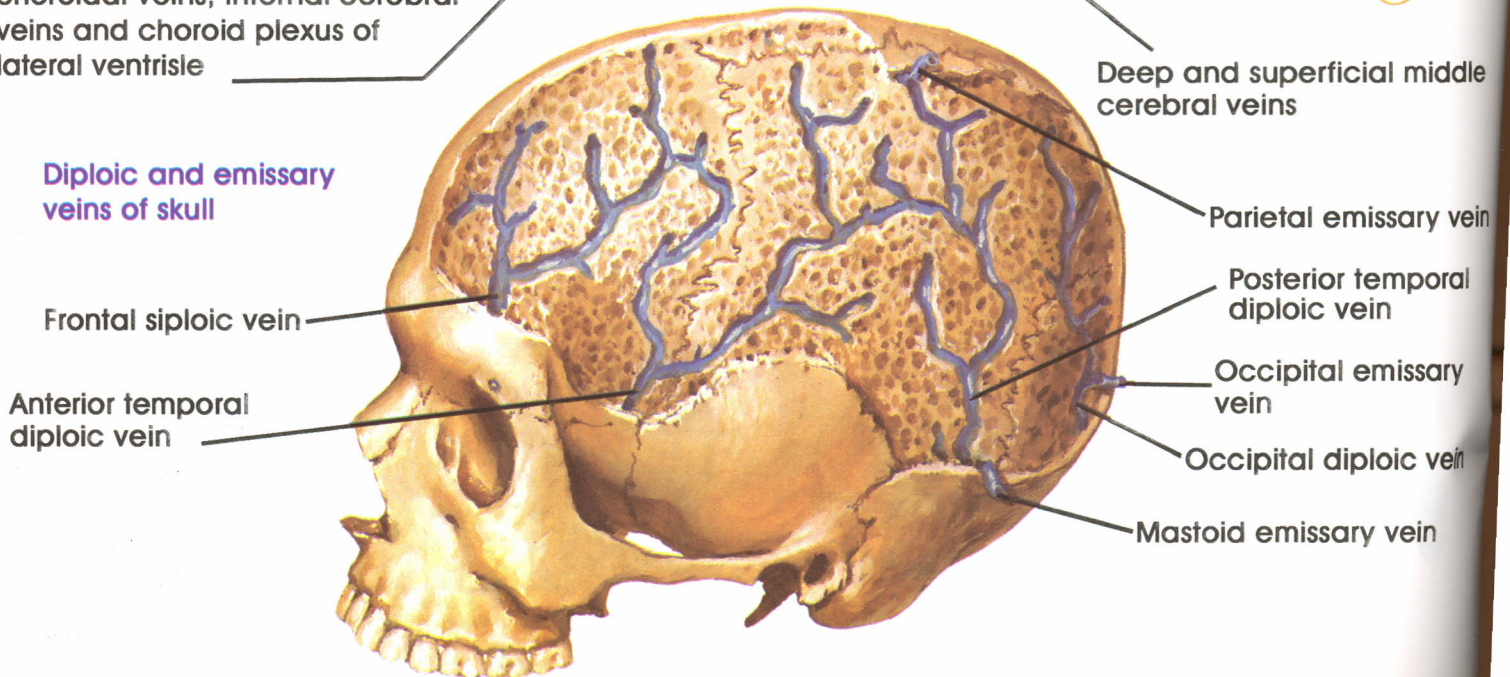
Coronal dissection



Spiky

Superior thalamostriate and choroidal veins, internal cerebral veins and choroid plexus of lateral ventricle

Diploic and emissary veins of skull



Frontal diploic vein

Anterior temporal diploic vein

Deep and superficial middle cerebral veins

Parietal emissary vein

Posterior temporal diploic vein

Occipital emissary vein

Occipital diploic vein

Mastoid emissary vein

Meninges and Diploic Veins

Frontal (anterior) and parietal (posterior) branches of middle meningeal artery

Middle meningeal artery

Anterior meningeal branch of anterior ethmoidal artery

Arachnoid granulations

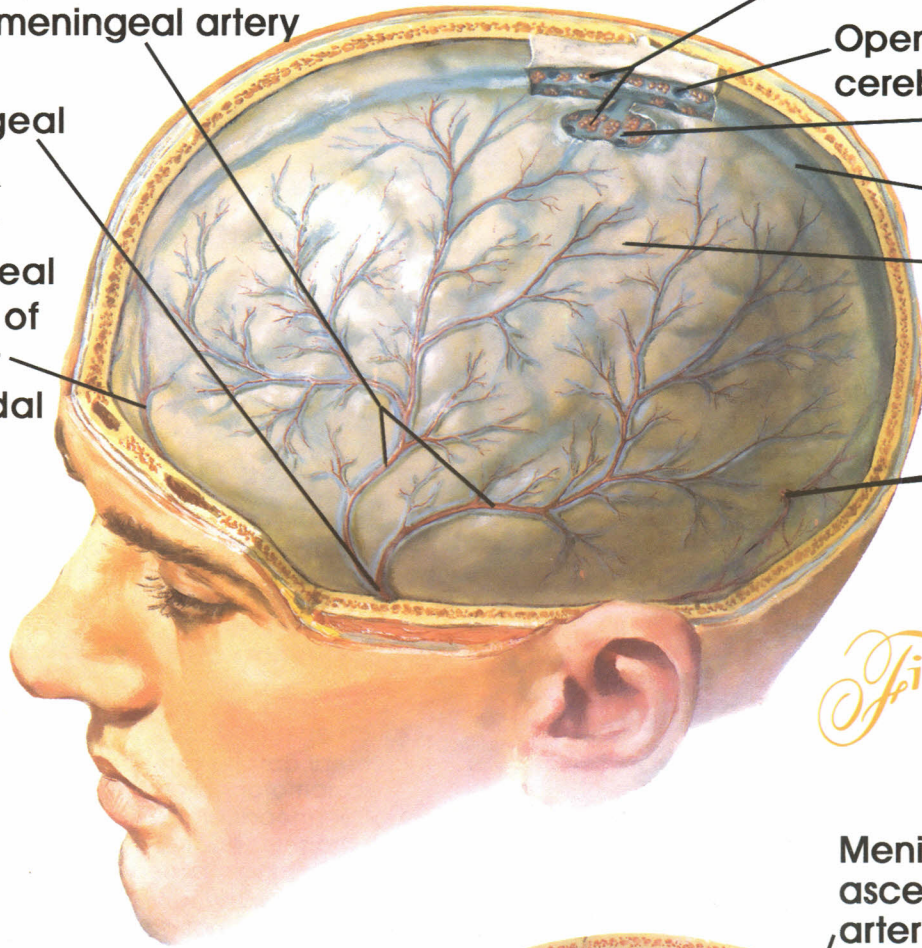
Opening of superior cerebral vein

Lateral (venous) lacuna

Superior sagittal sinus

Dura mater

Mastoid branch of occipital artery



Tiky

Meningeal branches of ascending pharyngeal artery

Mastoid branch of occipital artery

Middle meningeal artery

Recurrent meningeal branch of lacrimal (ophthalmic) artery

Accessory meningeal artery

Anterior meningeal branch of anterior ethmoidal artery

Posterior ethmoidal artery

Internal carotid artery and its meningohypophyseal trunk

Middle meningeal artery

Accessory meningeal artery

Superficial temporal artery

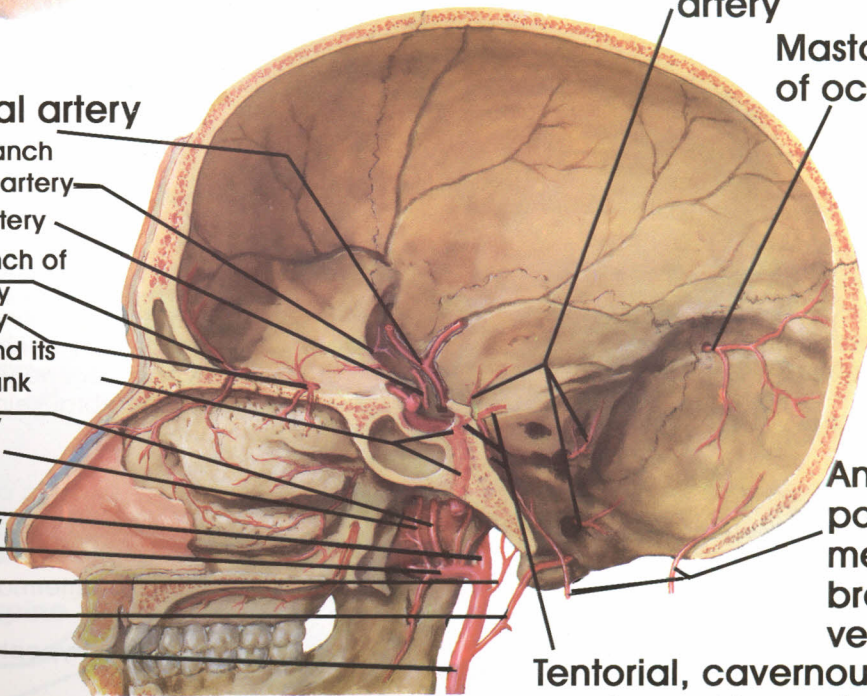
Maxillary artery

Posterior auricular artery

Occipital artery

External carotid artery

External carotid artery

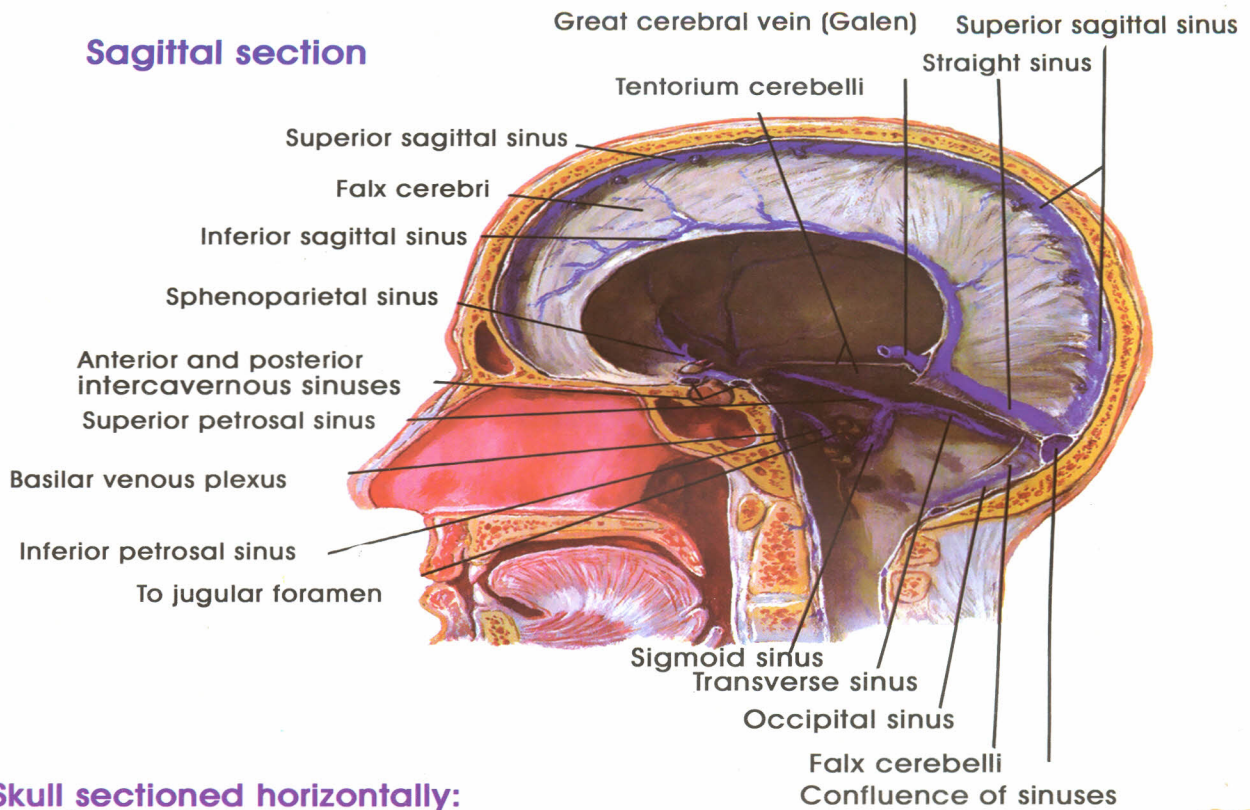


Anterior and posterior meningeal branches of vertebral artery

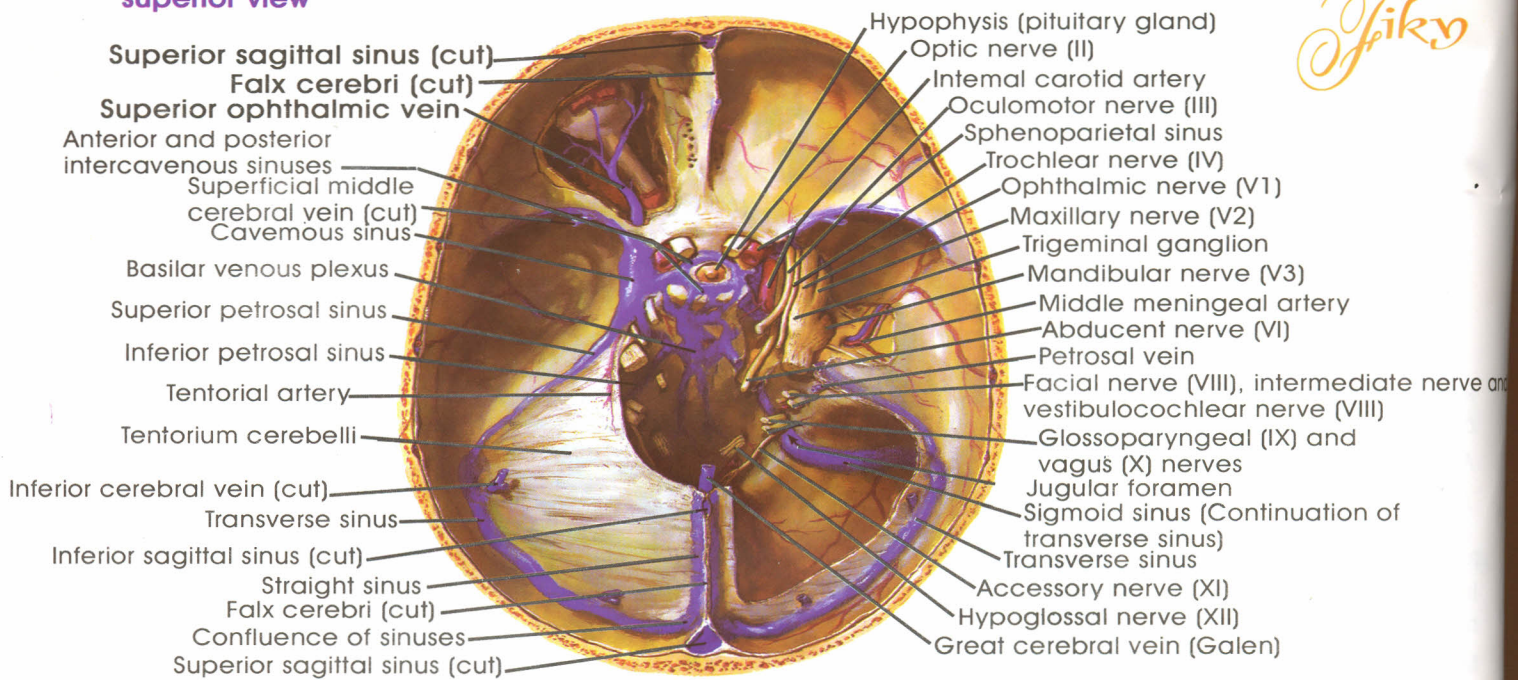
Tentorial, cavernous sinus and meningeal branches of meningohypophyseal trunk

MENINGES AND Meningeal arteries

Sagittal section

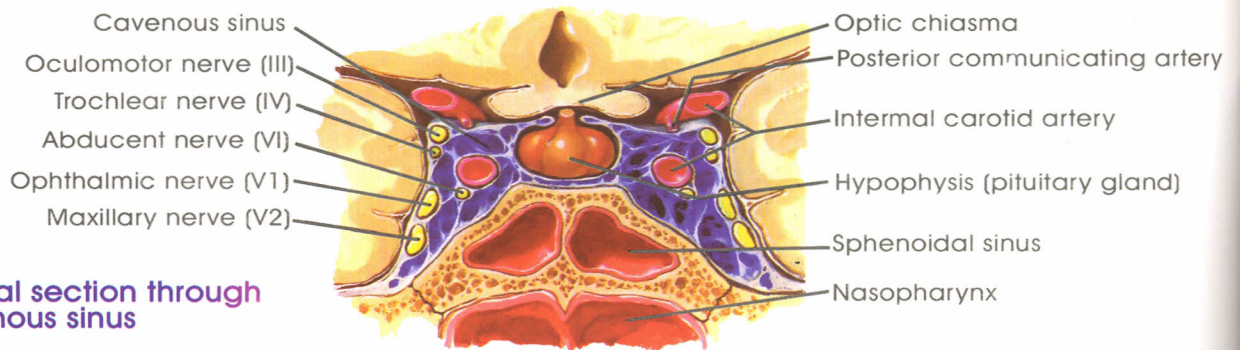


Skull sectioned horizontally: superior view

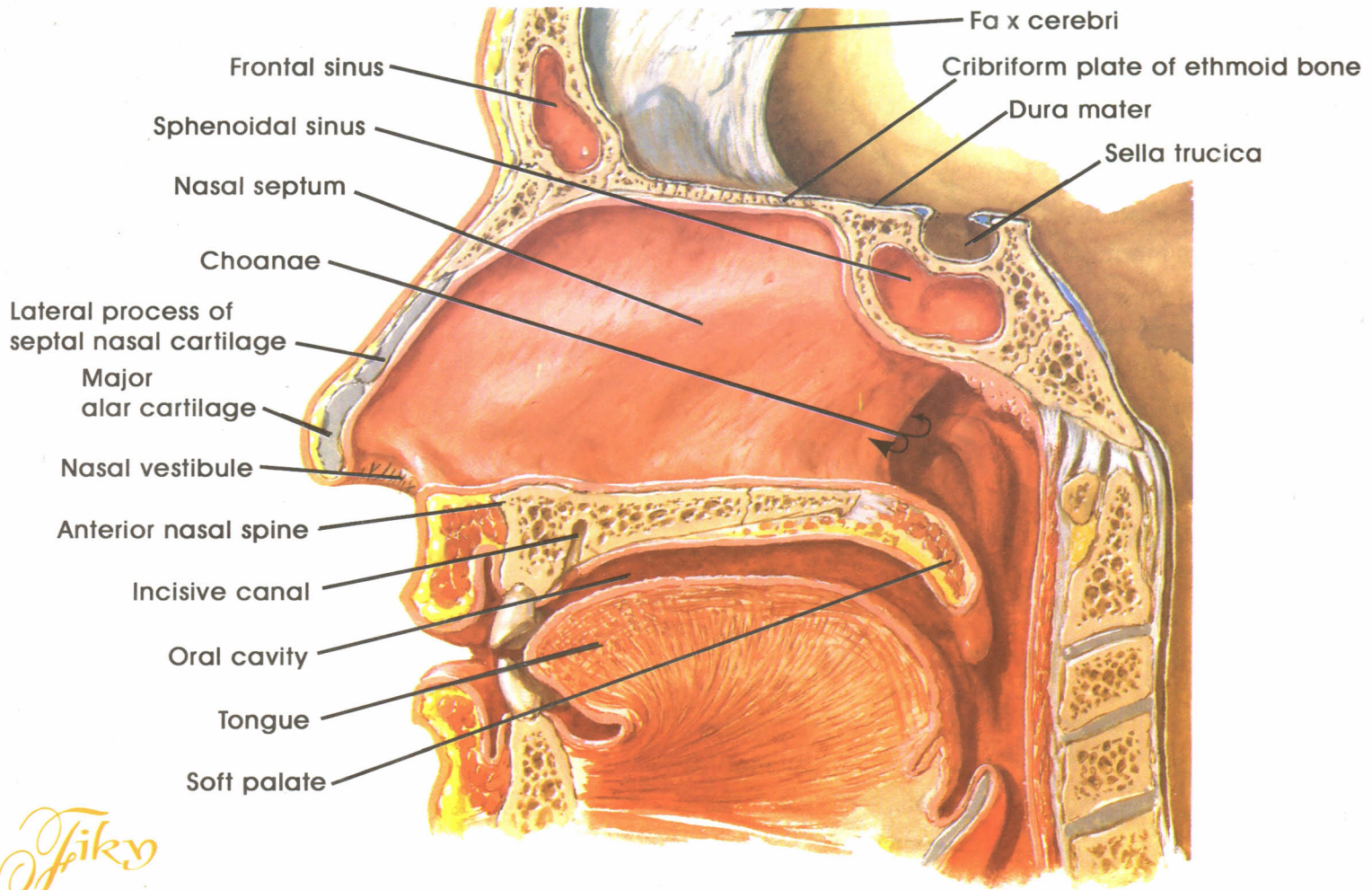


El-Fiky

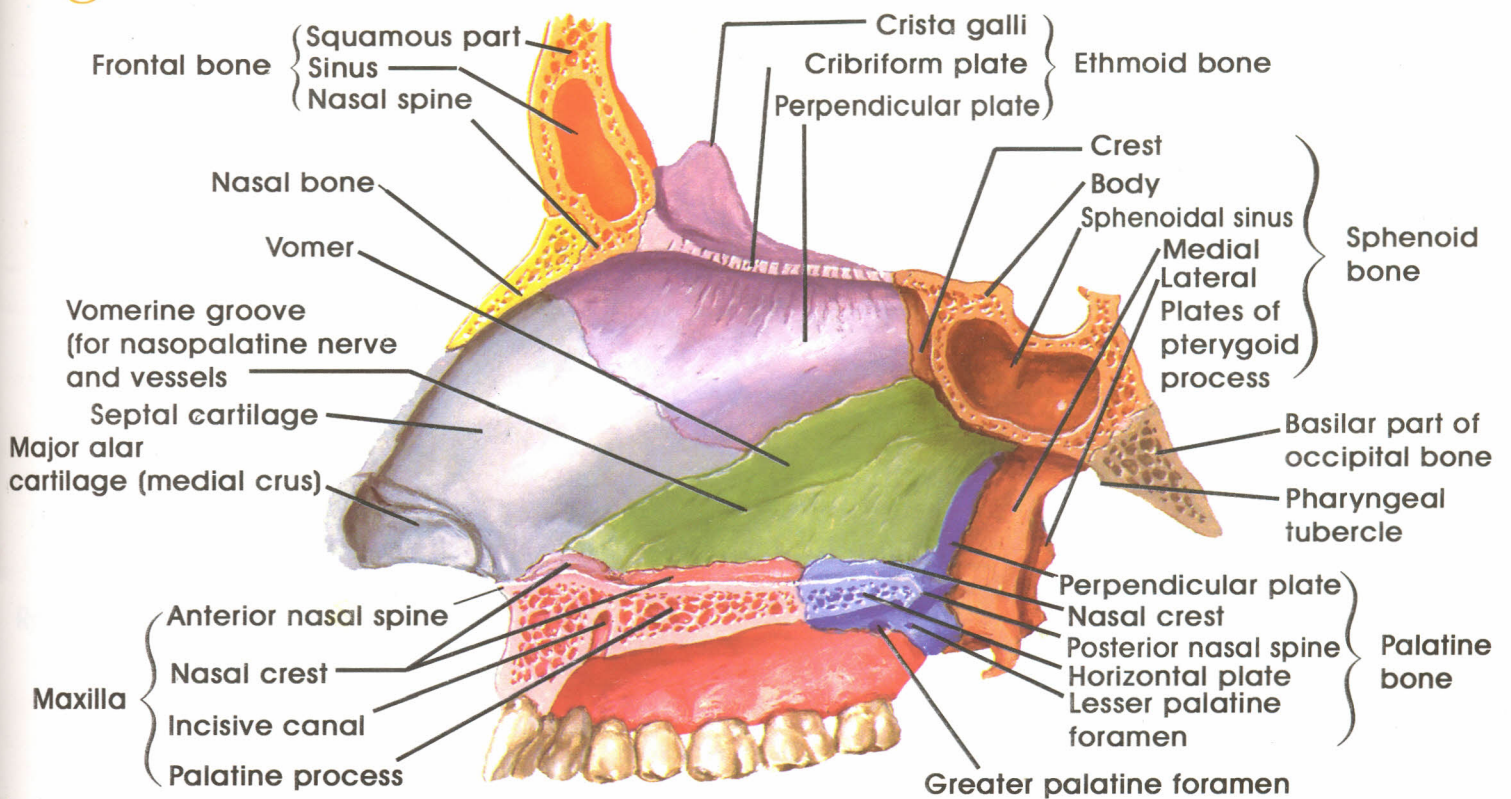
Coronal section through cavernous sinus



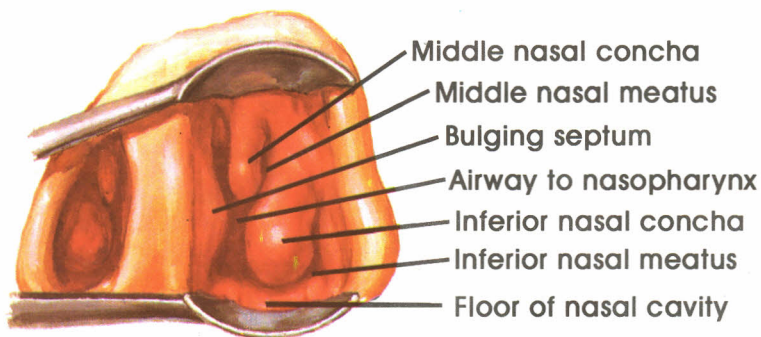
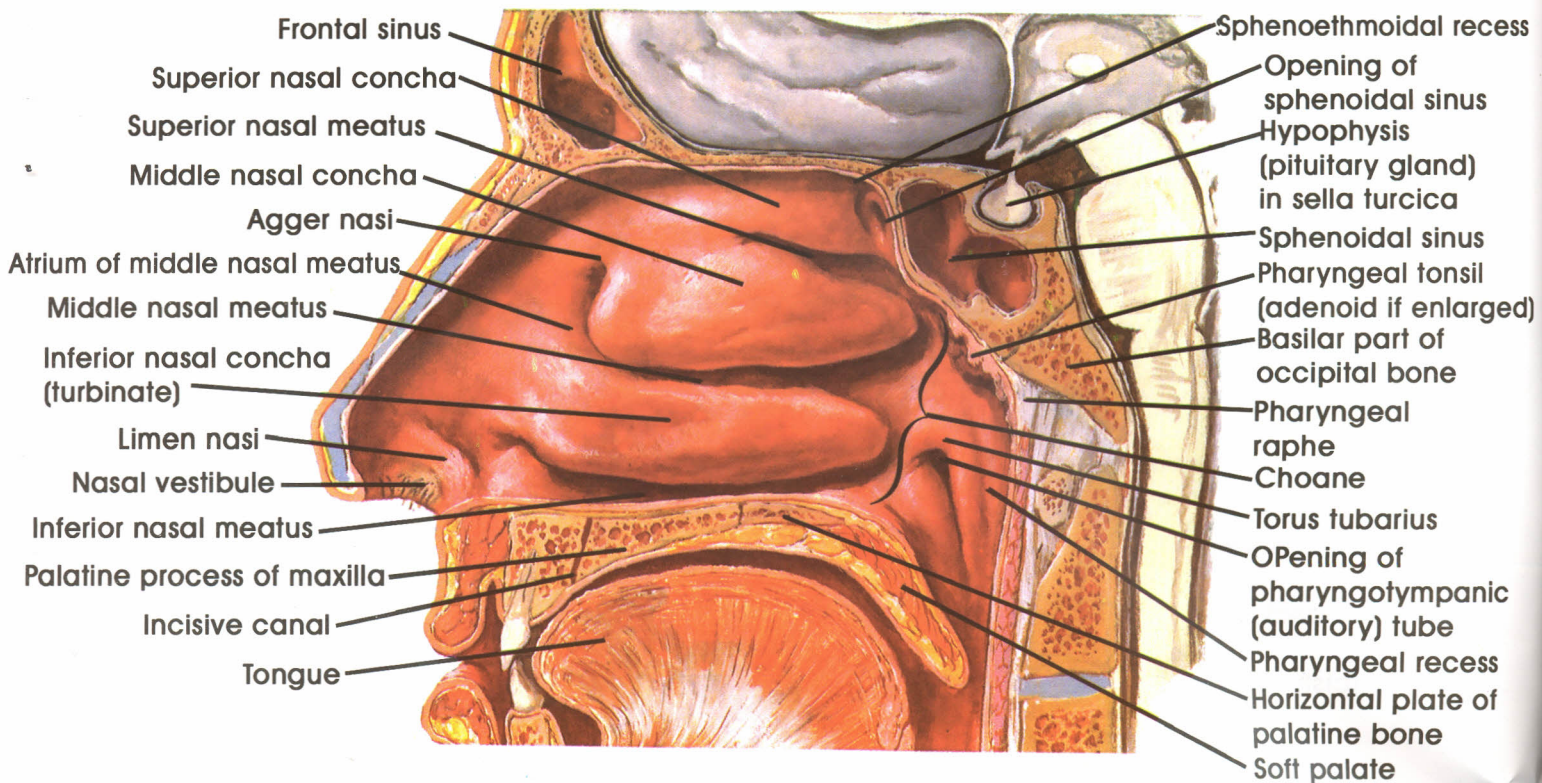
Dural Venous sinuses



Fiky

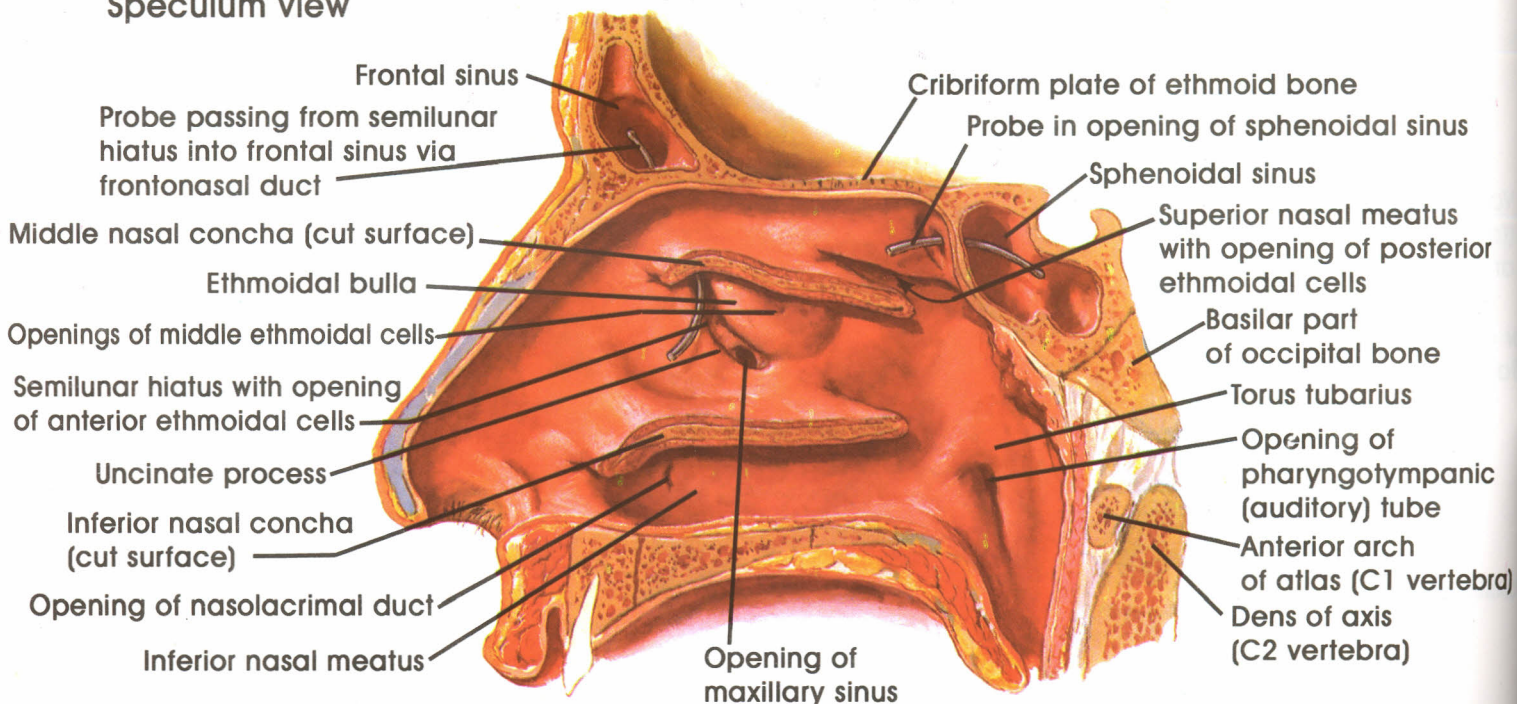


Medial wall of Nasal Cavity (Nasal Septum)



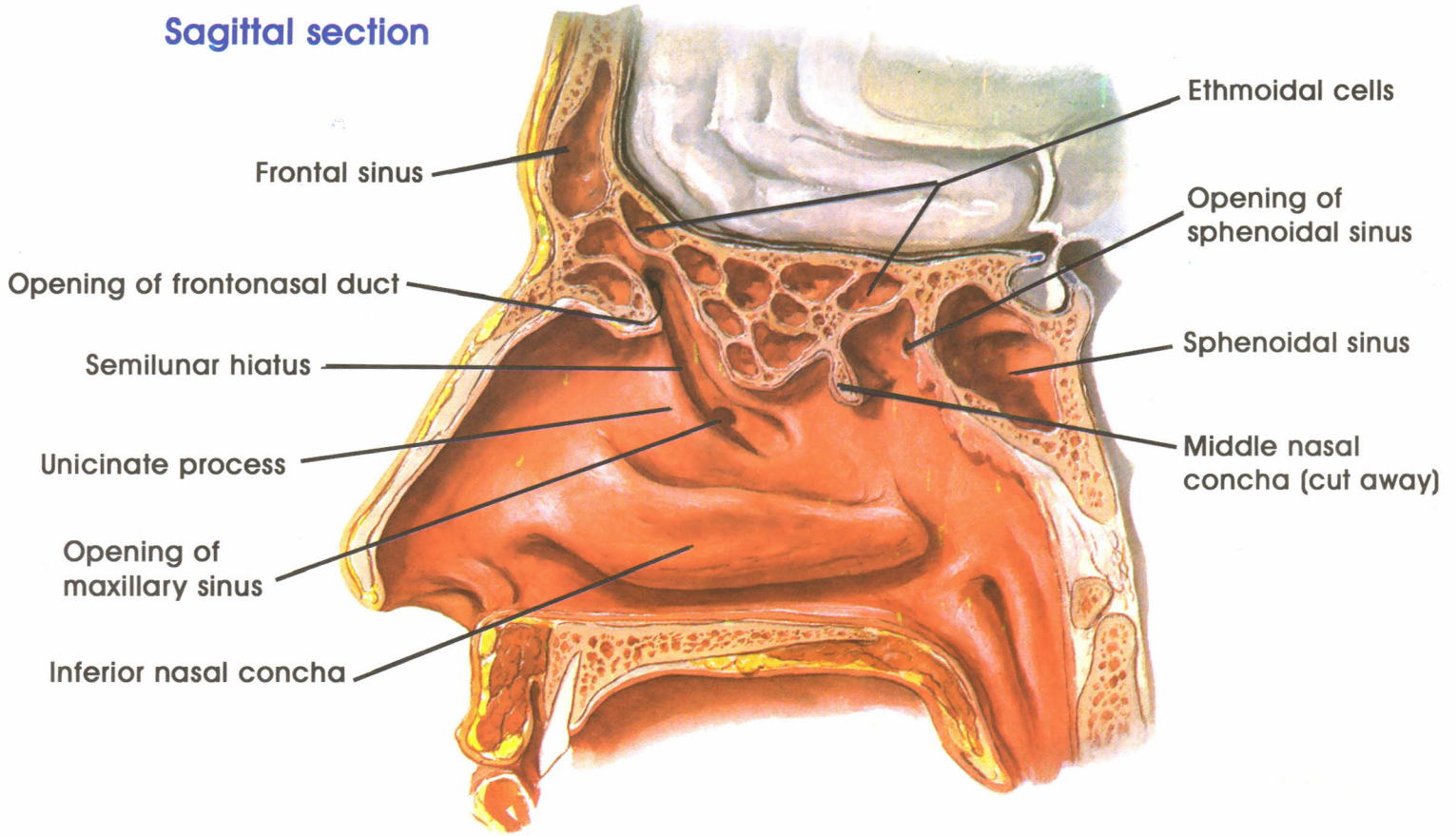
Speculum view

Spiky

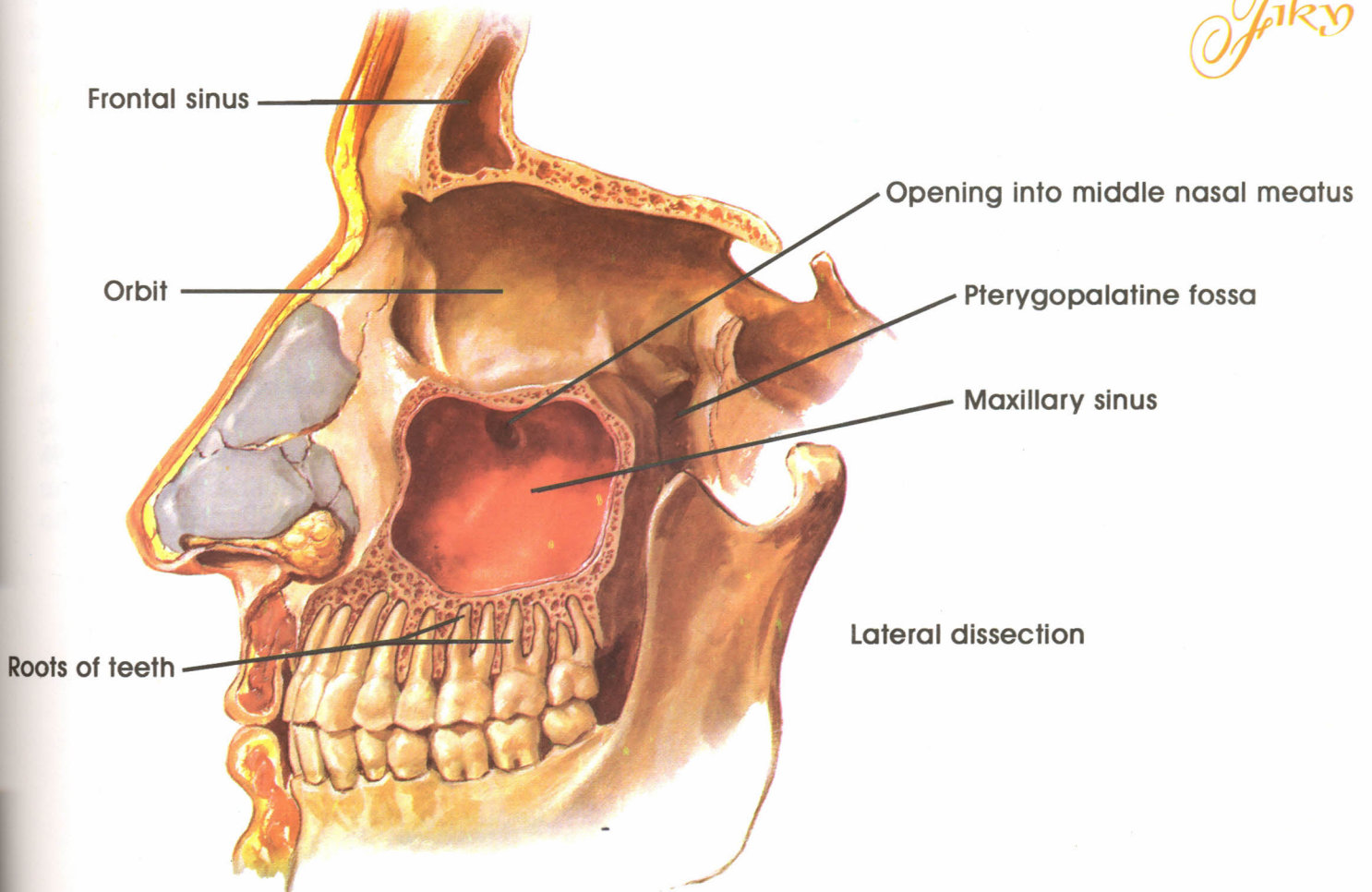


Lateral Wall of Nasal Cavity

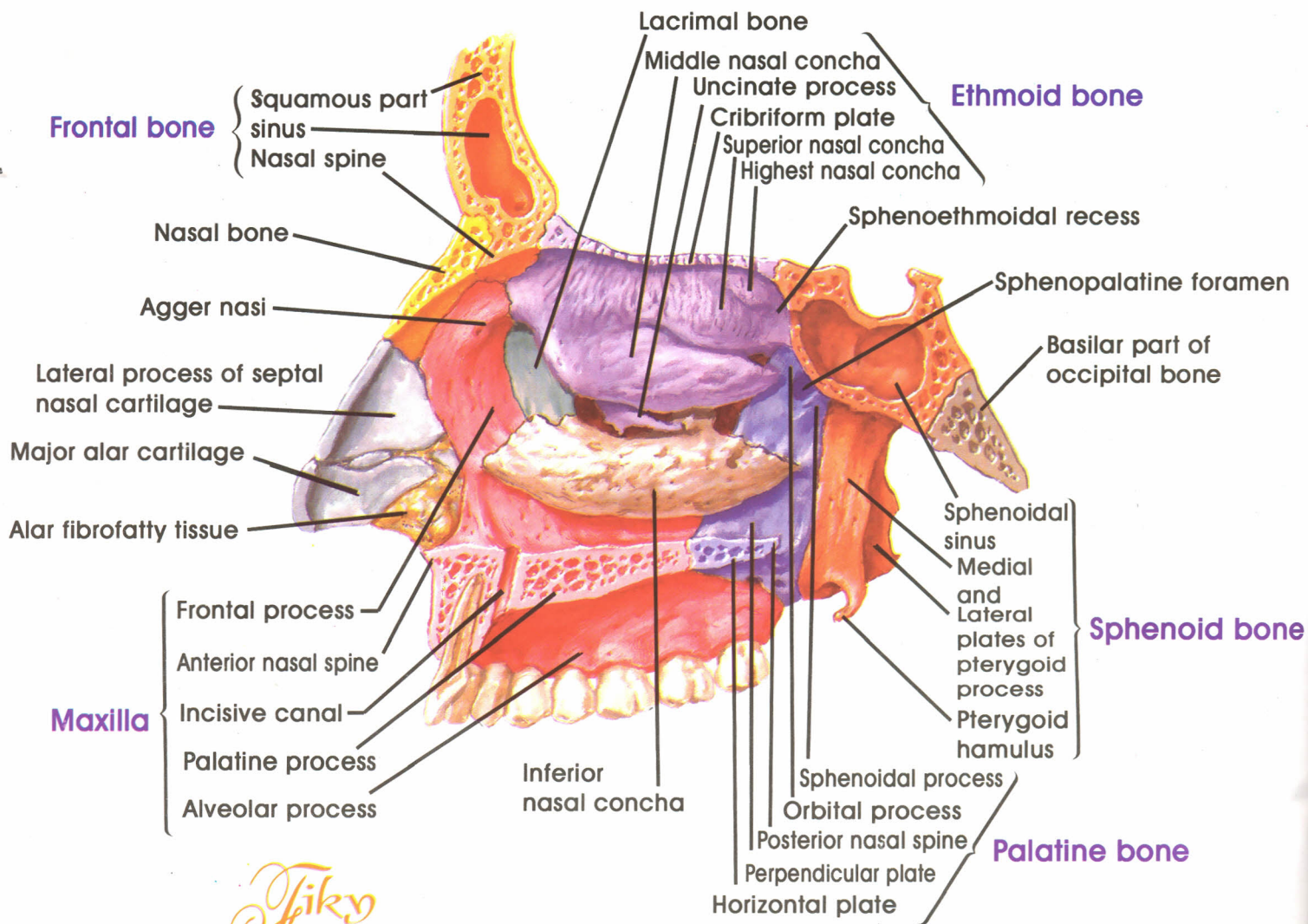
Sagittal section



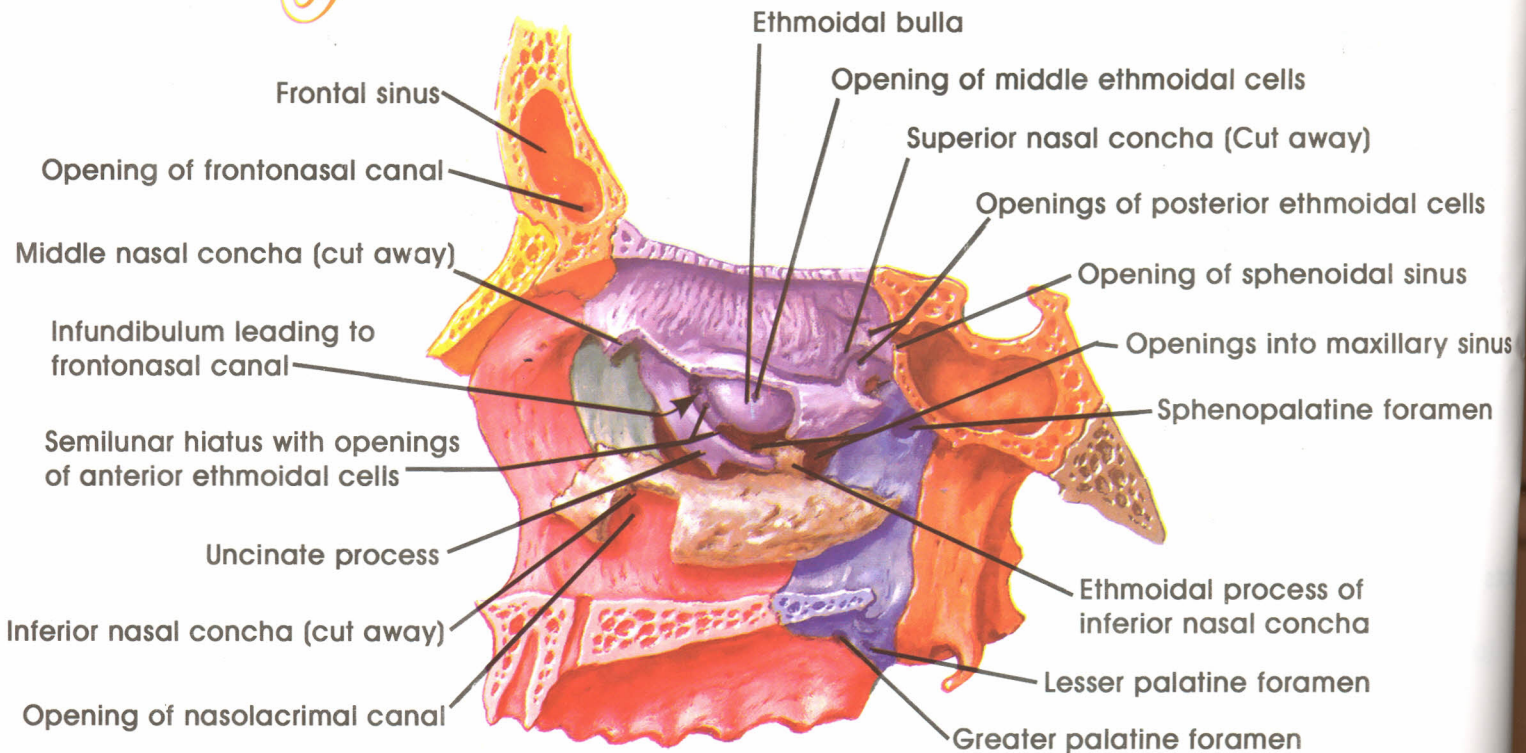
Fiky



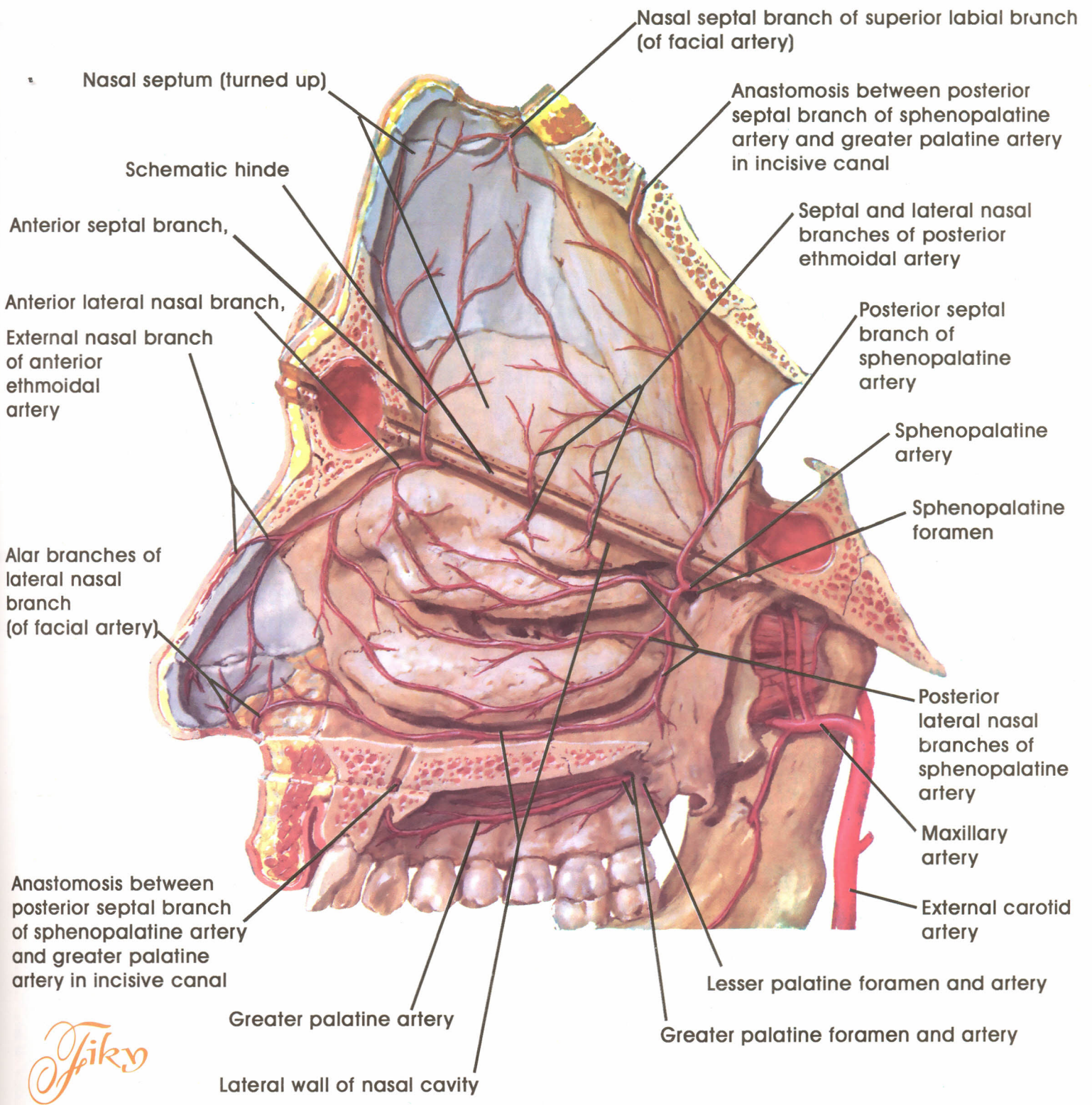
Lateral wall of Nasal Cavity (lateral dissection)



Spiky

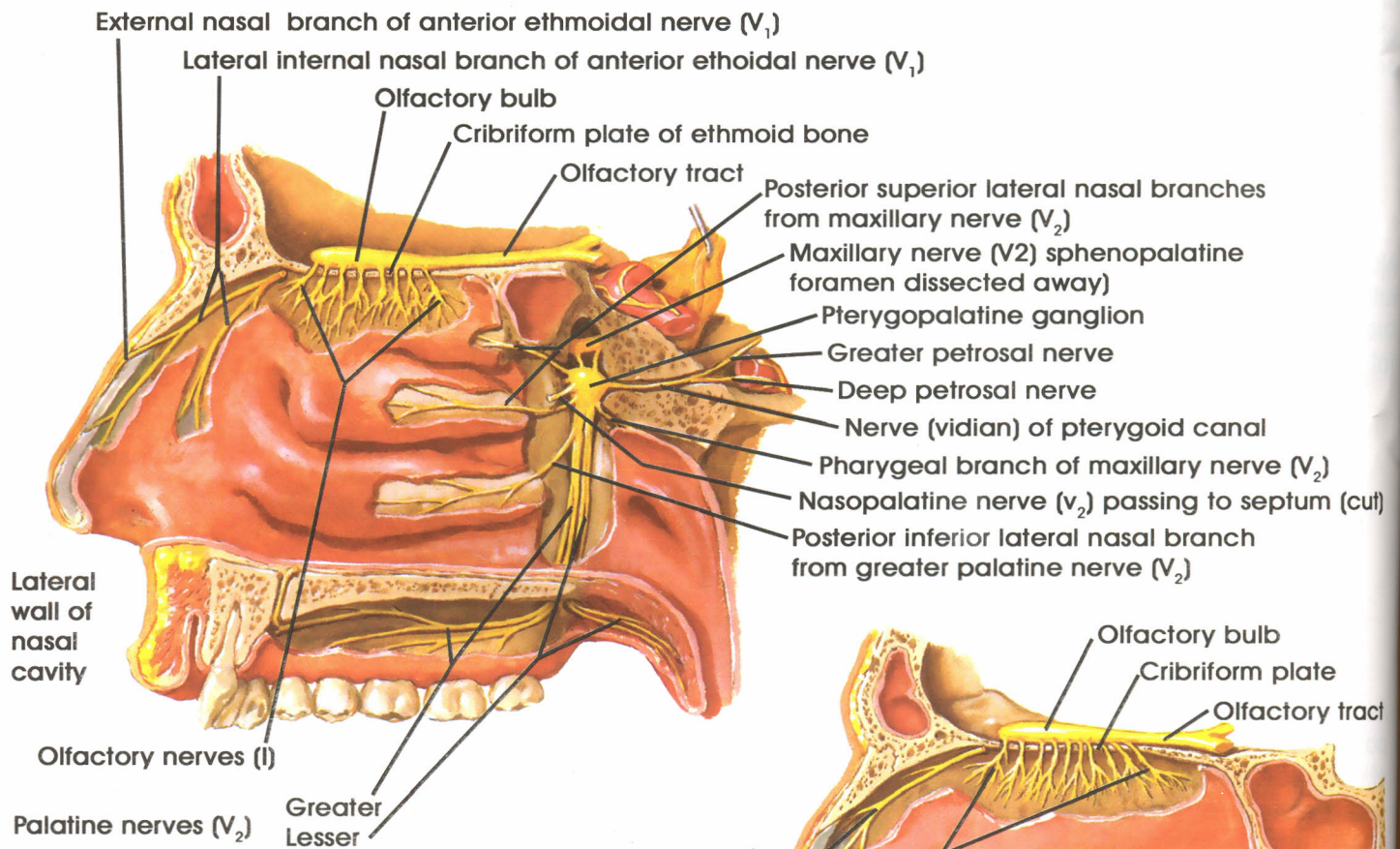
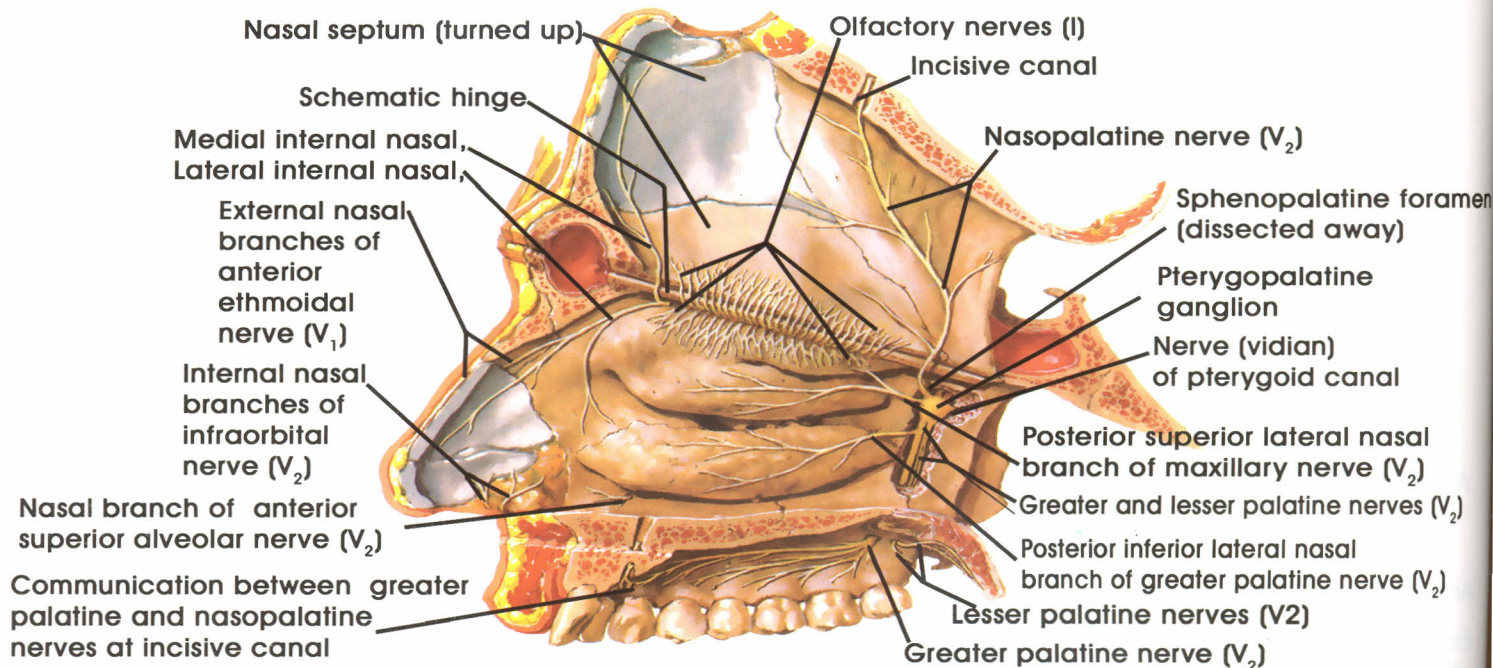


Lateral wall of Nasal Cavity (continued)

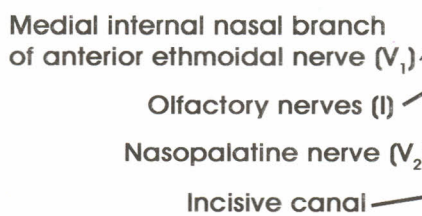


Elfiky

Arteries of Nasal cavity - Nasal septum Turned Up



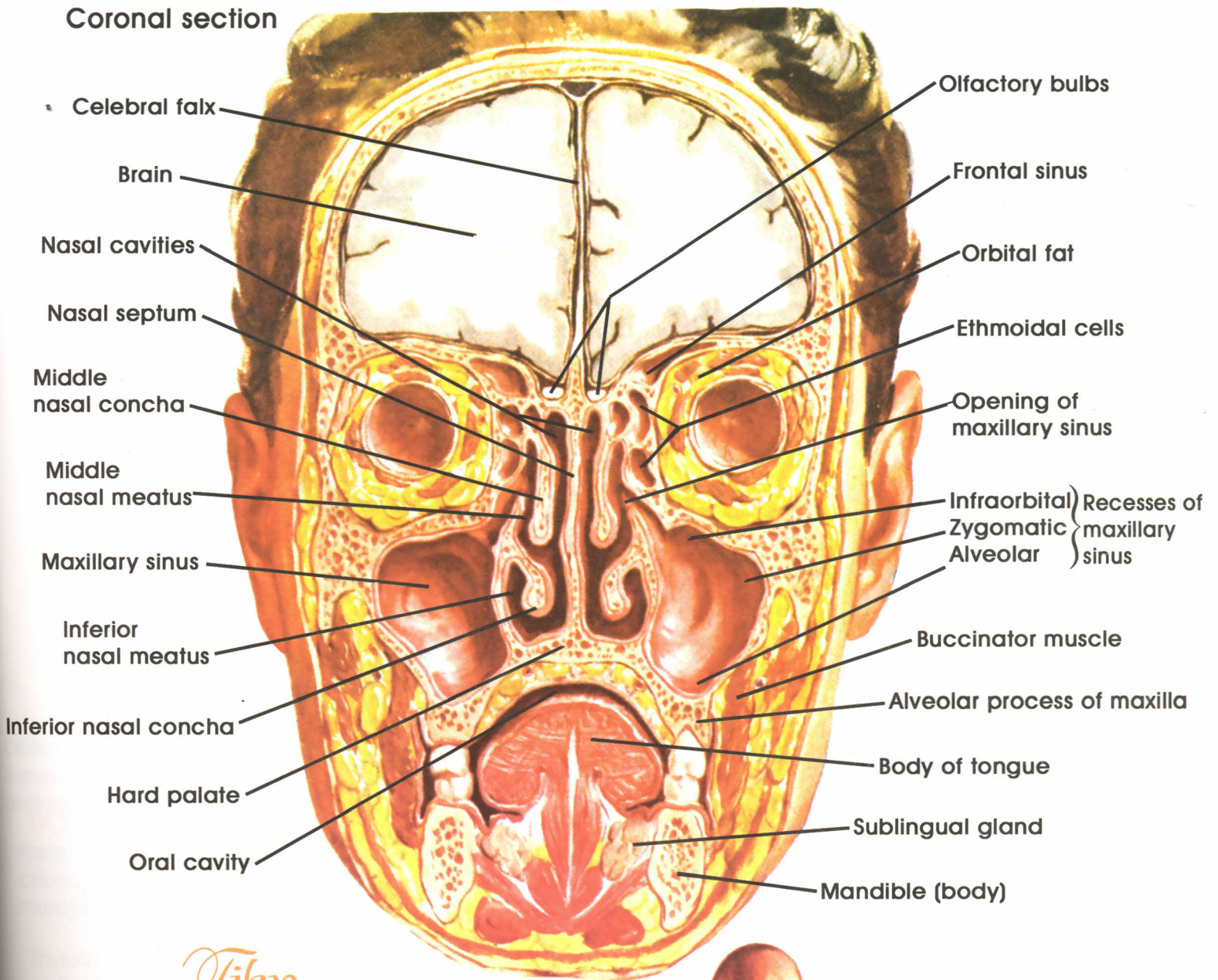
Fiky



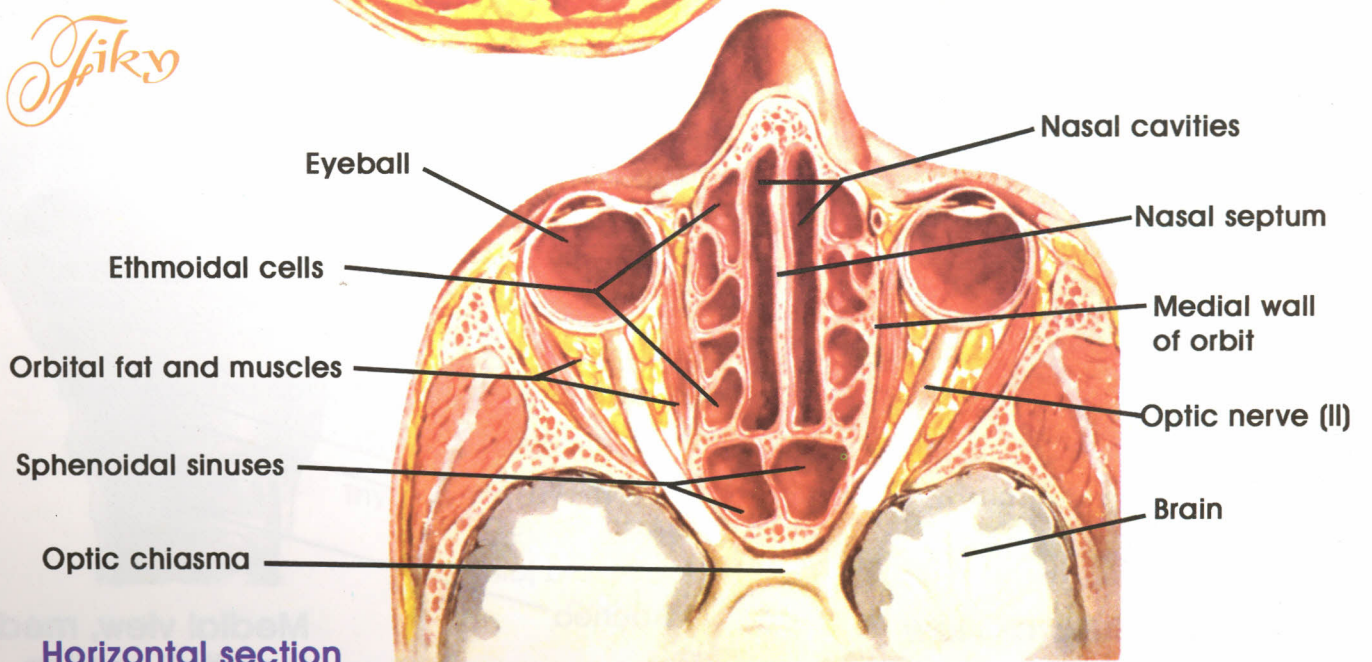
Nasal septum

Nerves of Nasal cavity

Coronal section

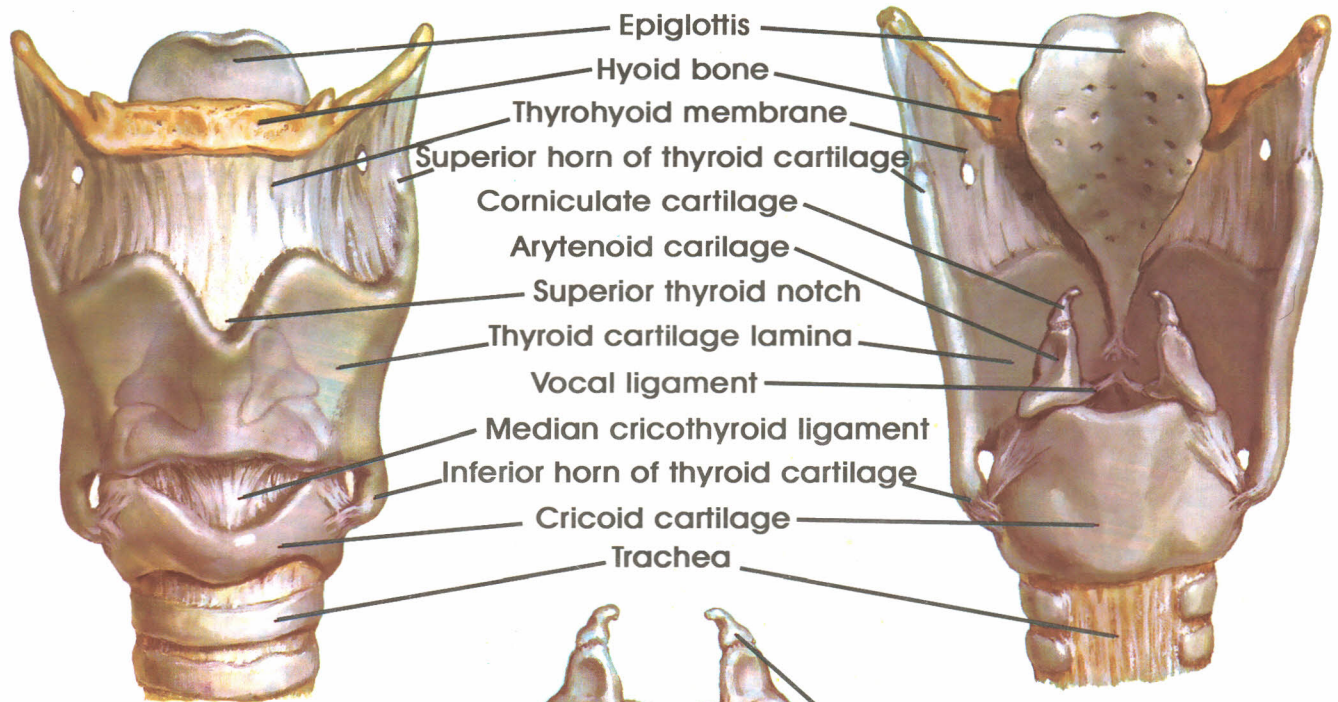


Spiky



Horizontal section

Paranasal Sinuses

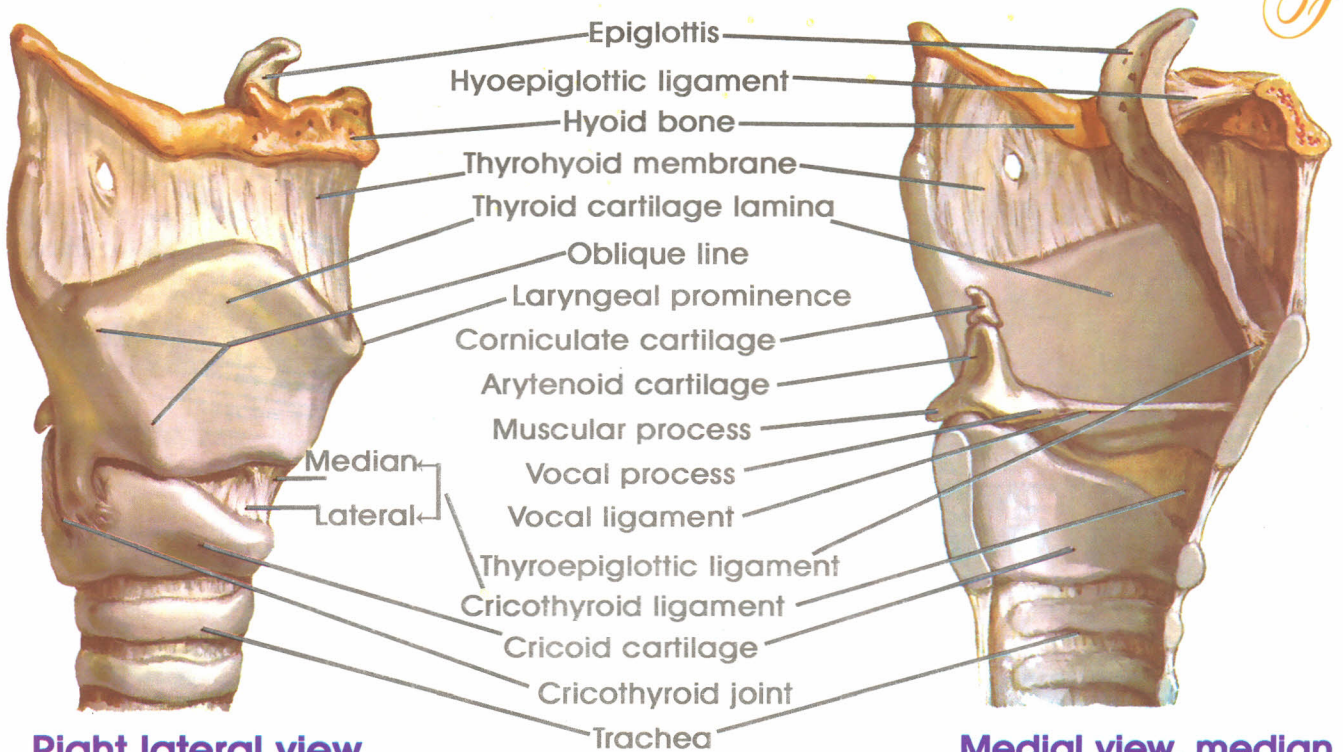


Anterior view

Posterior view



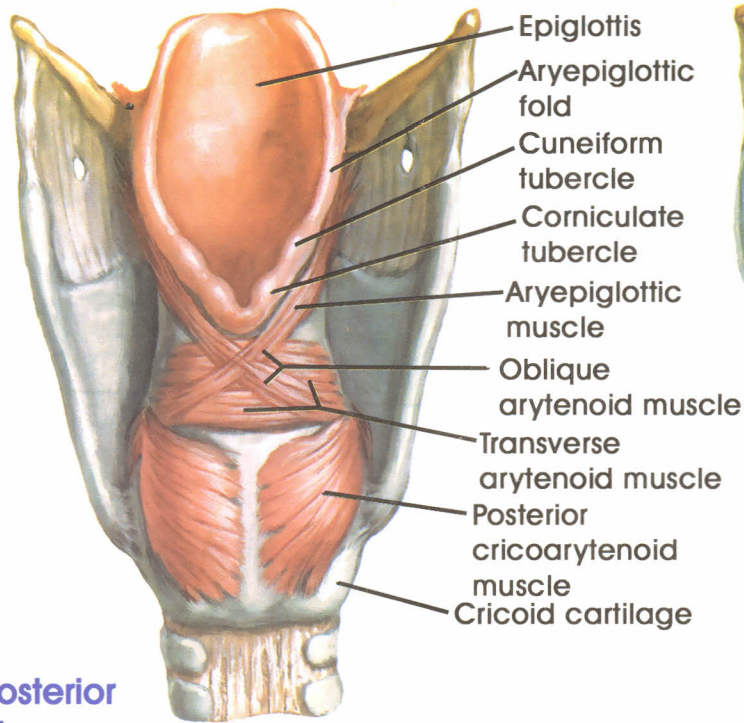
Anterosuperior view



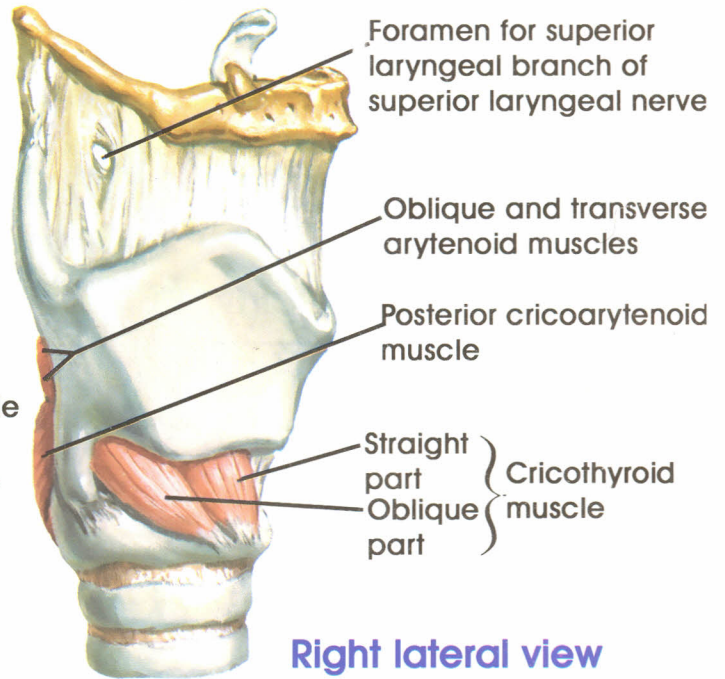
Right lateral view

Medial view, median (sagittal) section

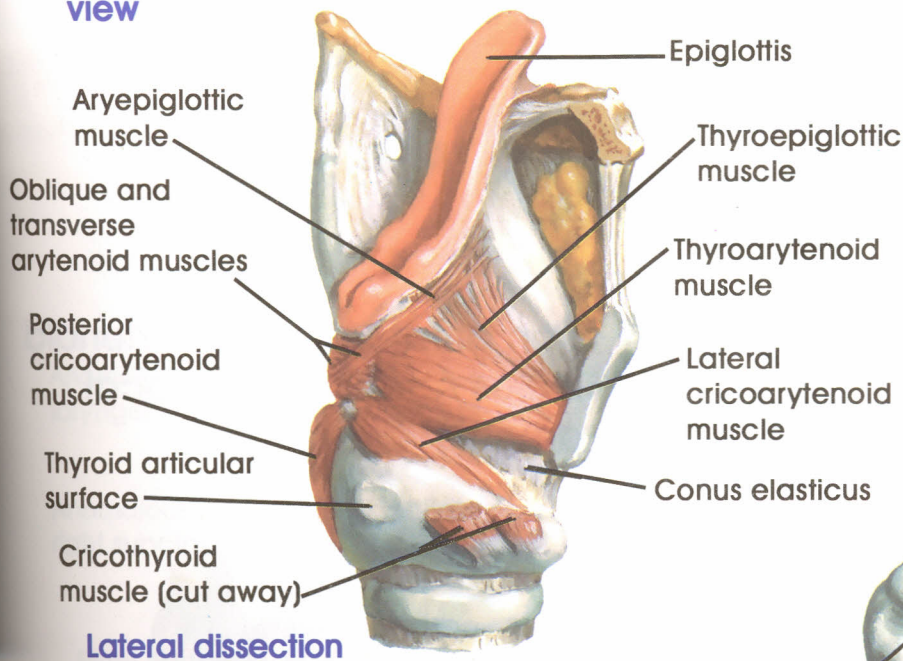
Cartilages of Larynx



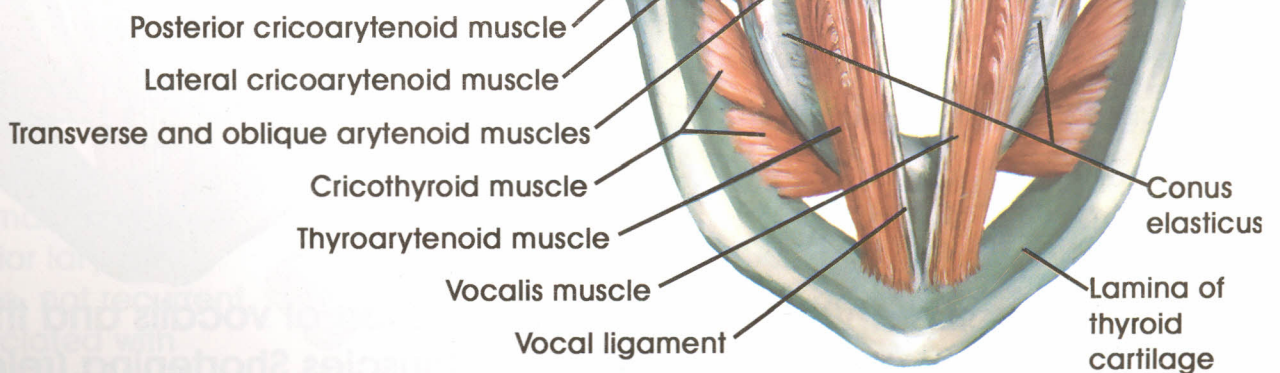
Posterior view



Right lateral view



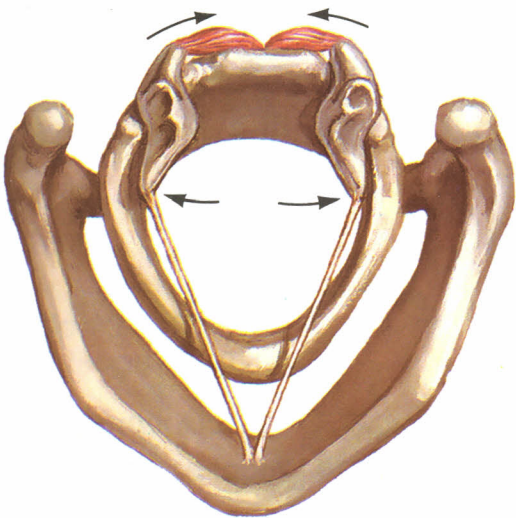
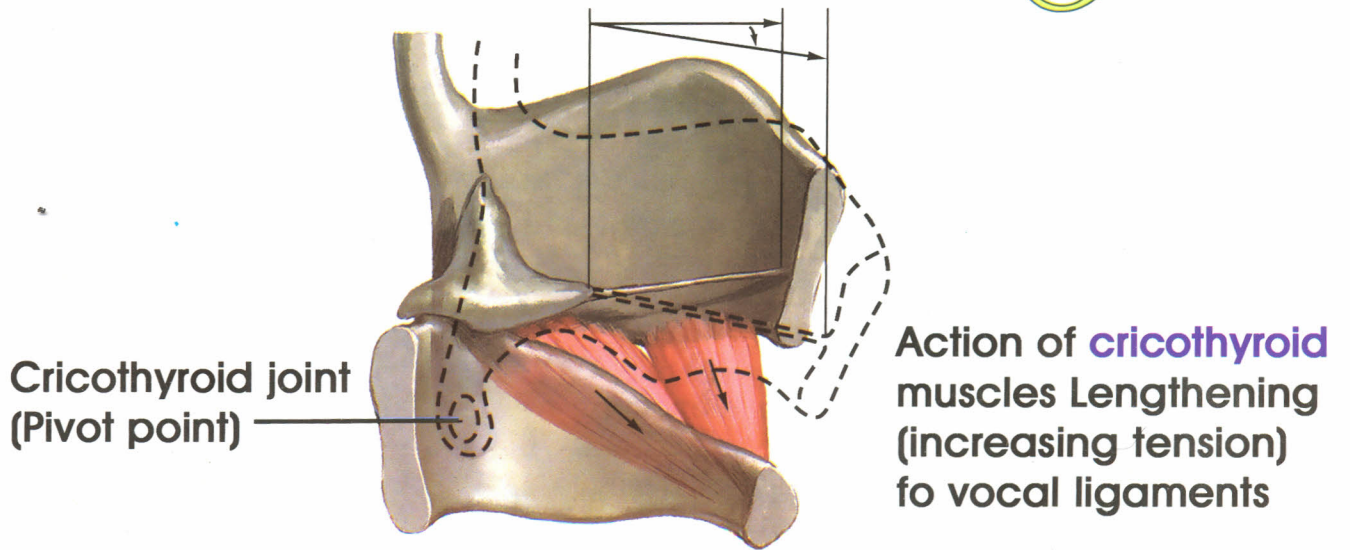
Lateral dissection



Superior view

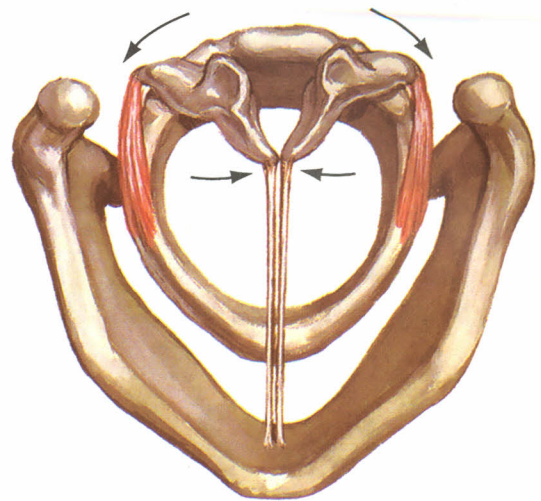
Intrinsic Muscles of Larynx

Tricky

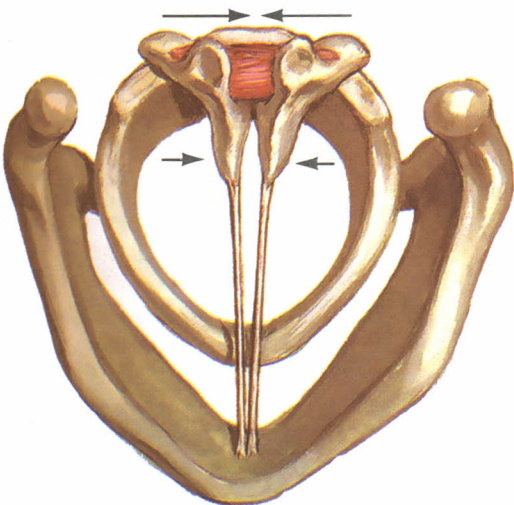


Action of **posterior cricoarytenoid** muscles Abduction of vocal ligaments

Spiky



Action of **lateral cricoarytenoid** muscles Abduction of vocal ligaments

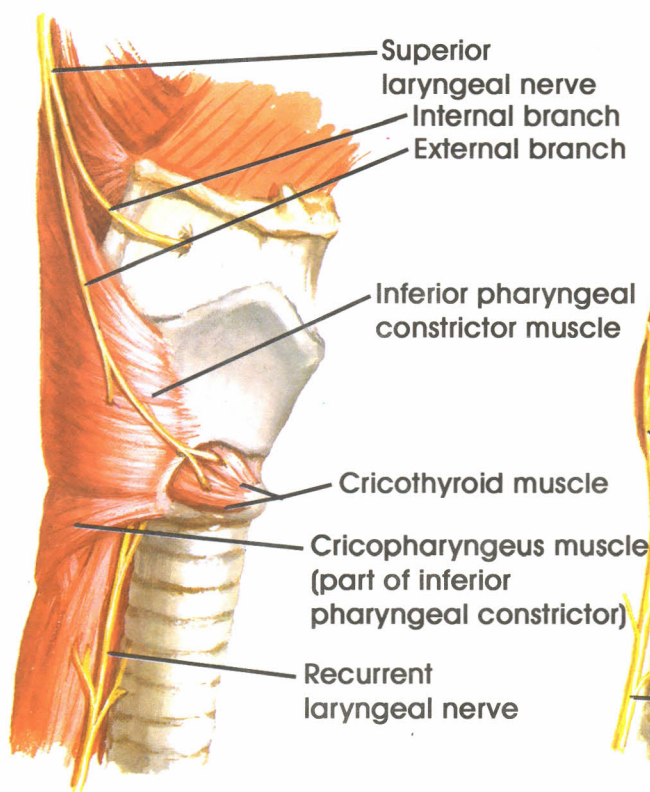


Action of **transverse arytenoid** muscle Adduction of vocal ligaments

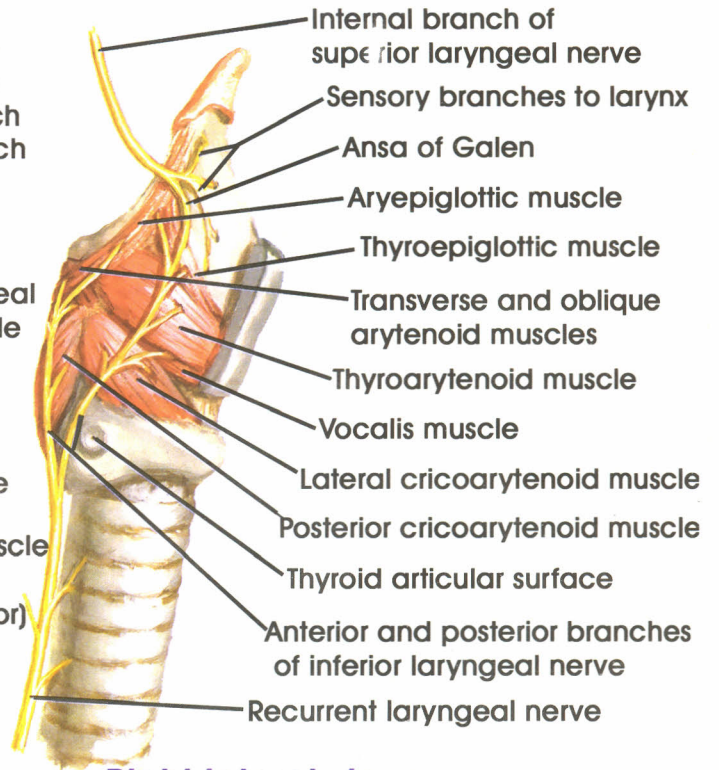


Action of **vocalis and thyroarytenoid** muscles Shortening (relaxation) of vocal ligaments

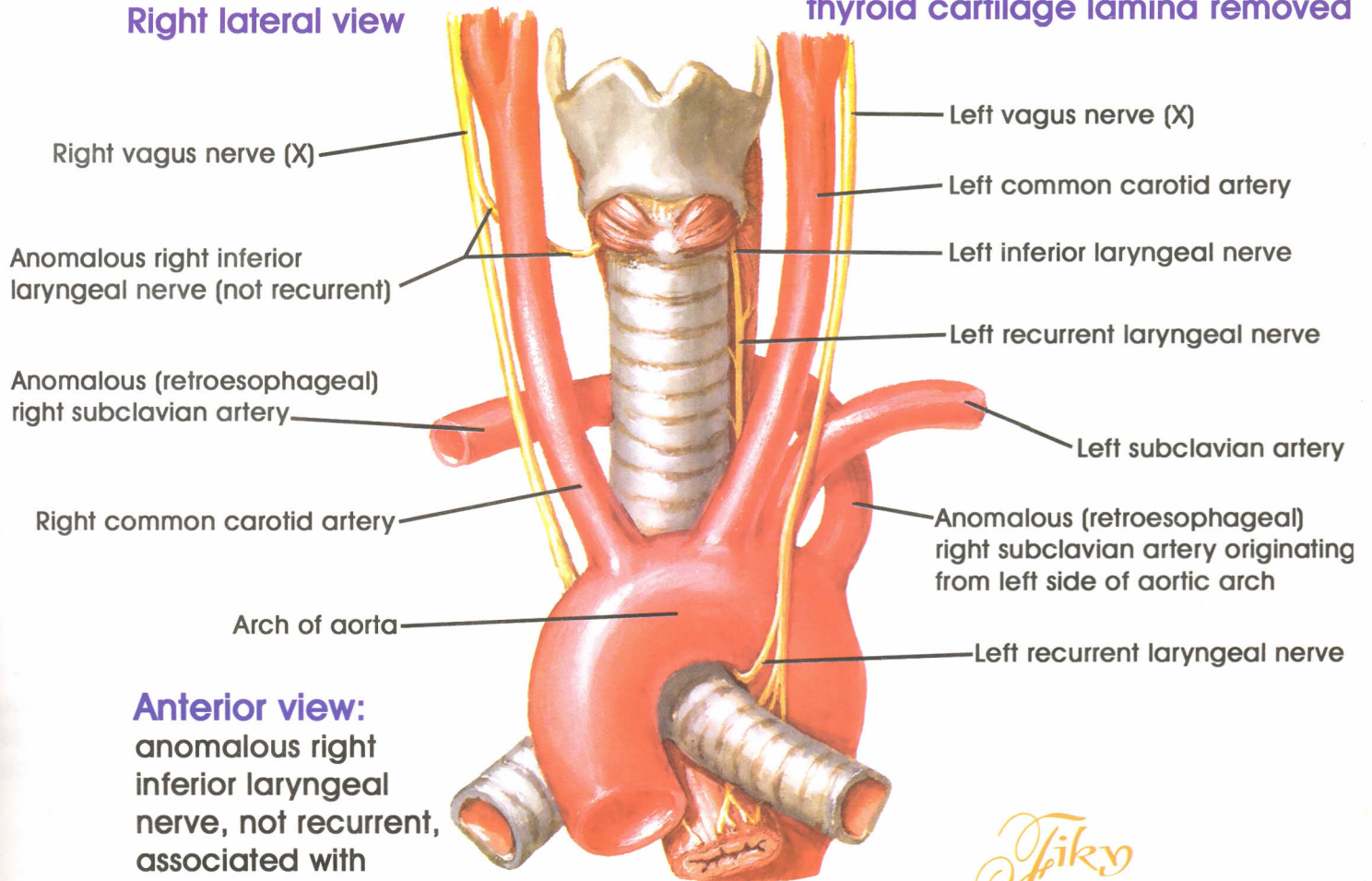
Action of Intrinsic Muscles of Larynx



Right lateral view



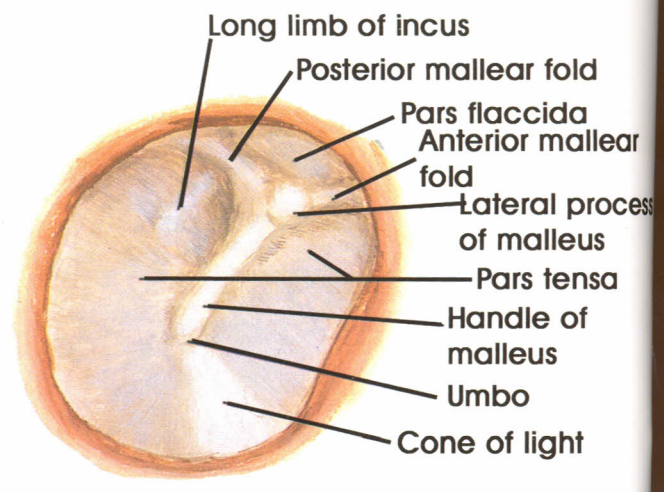
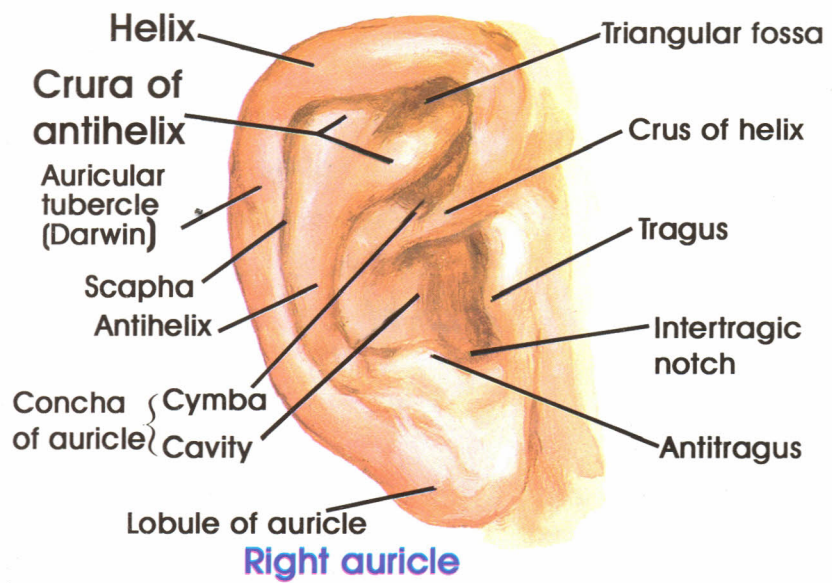
Right lateral view: thyroid cartilage lamina removed



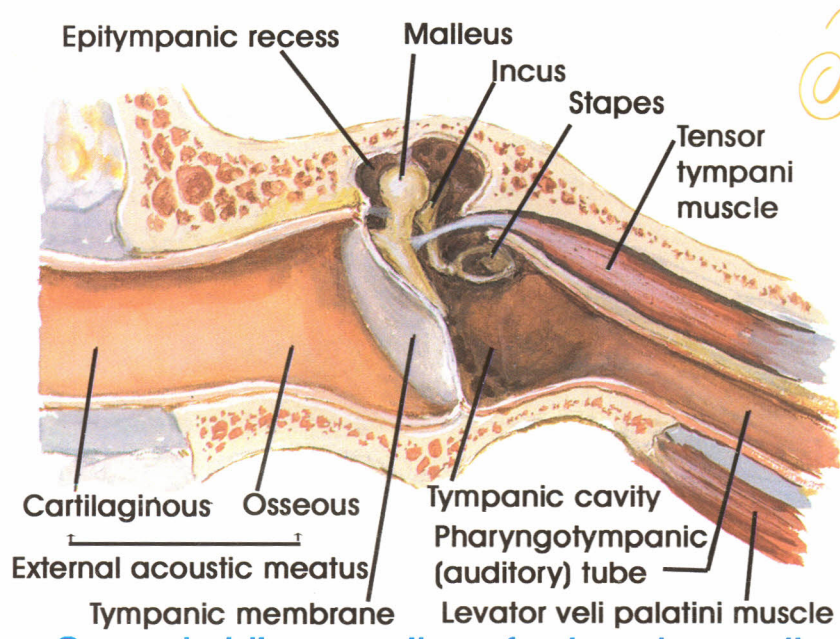
Anterior view: anomalous right inferior laryngeal nerve, not recurrent, associated with anomalous right subclavian artery

Nerves of Larynx



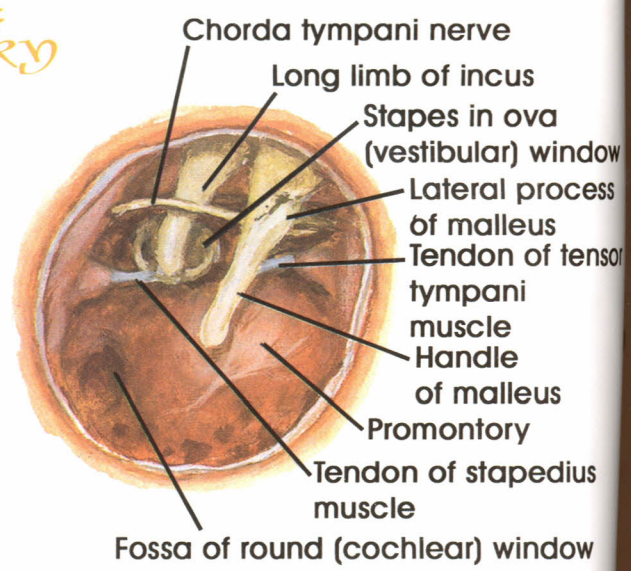


Right tympanic membrane (ear drum) viewed through speculum



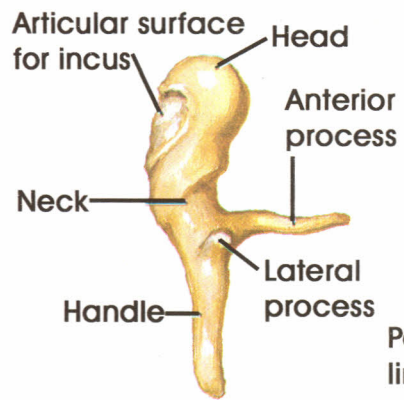
Coronal oblique section of external acoustic meatus and middle ear

Tiky

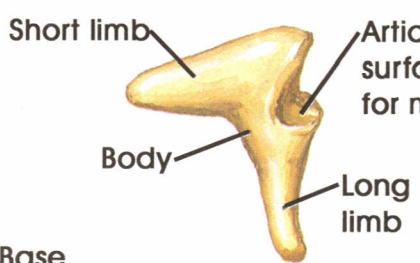


View into tympanic cavity after removal of tympanic membrane

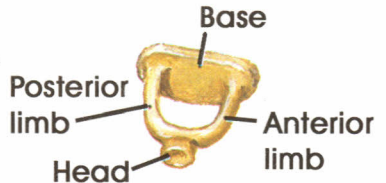
Auditory ossicles



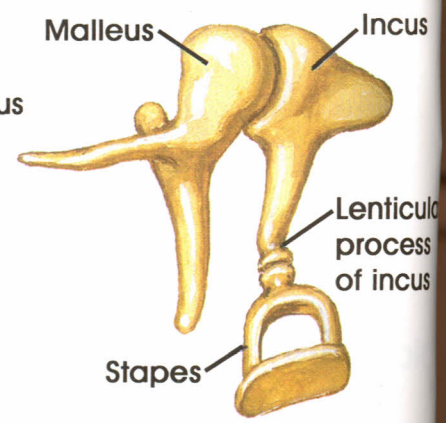
Malleus: lateral view



Incus: lateral view



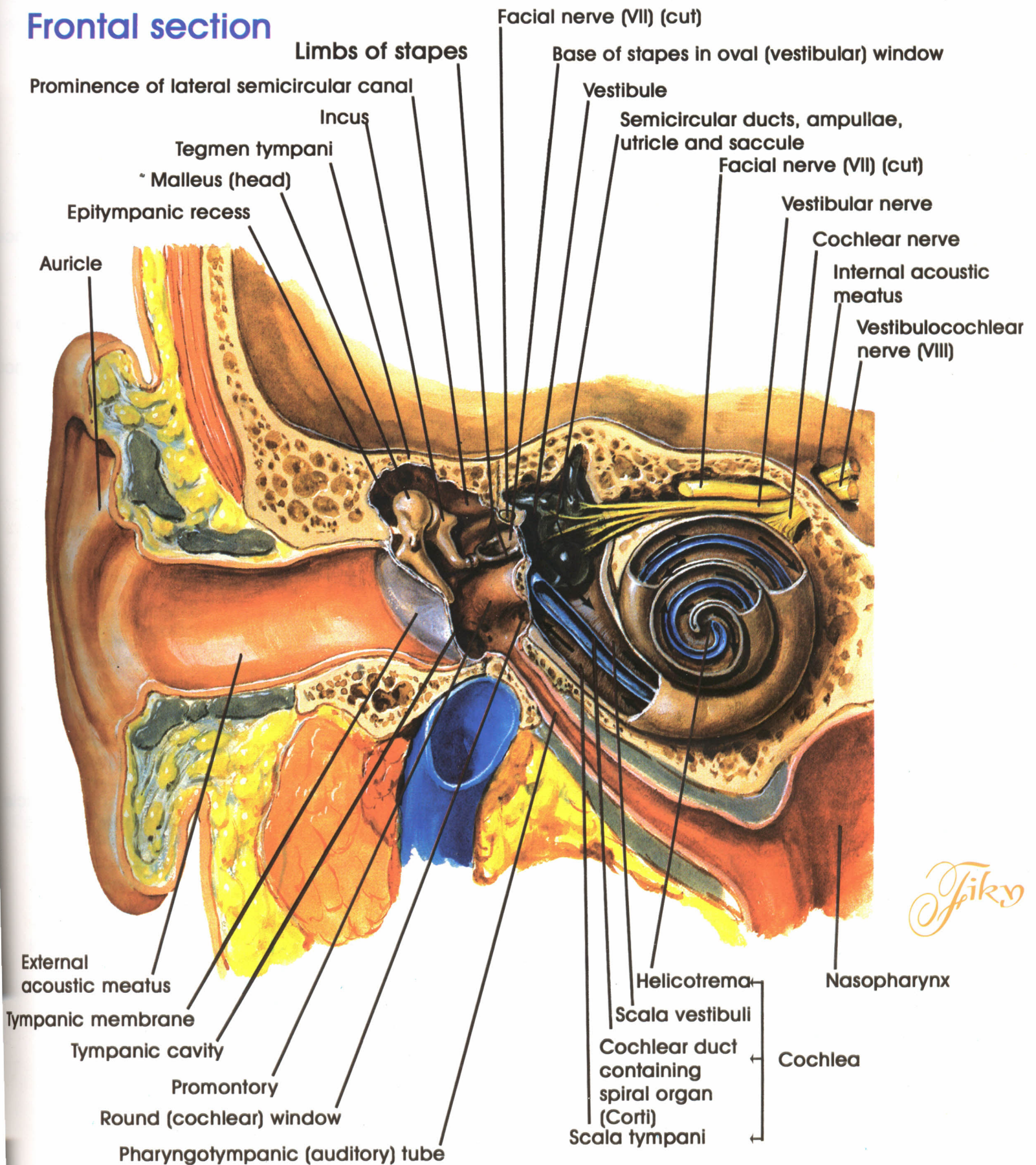
Stapes: superolateral view



Ossicles articulated: medial view

External Ear and Tympanic Cavity

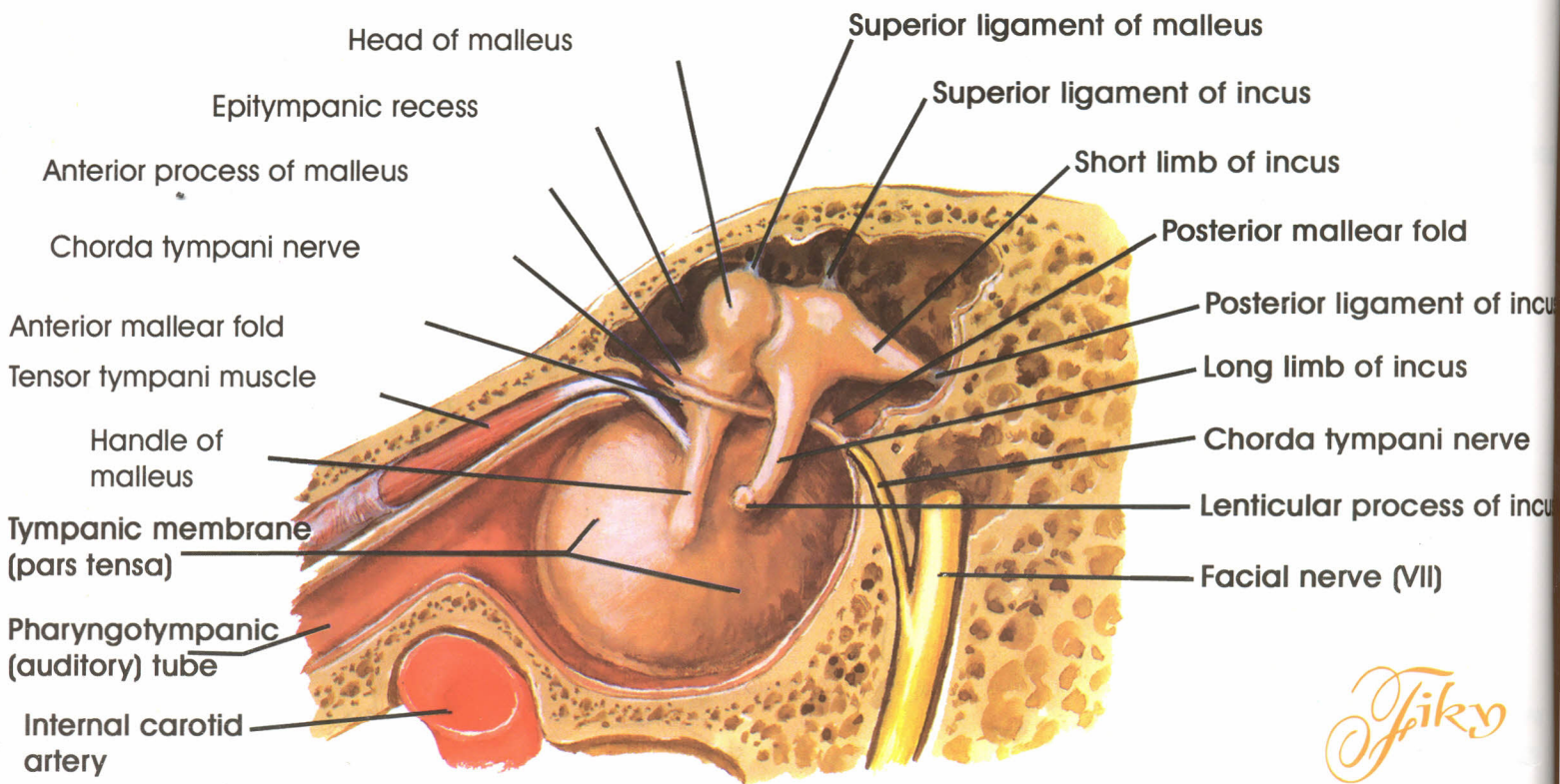
Frontal section



Spiky

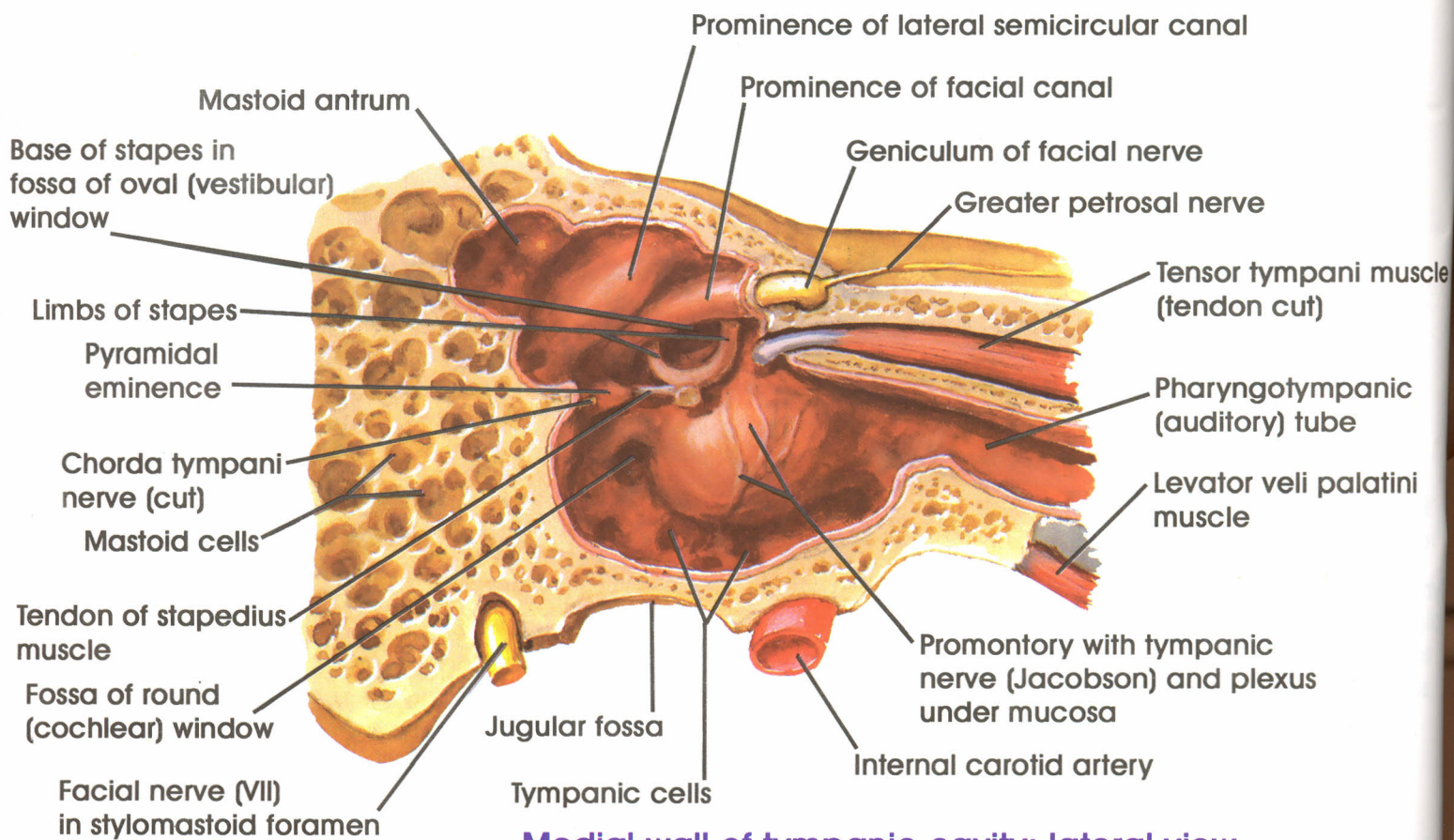
Note: Arrows indicate course of sound waves

Pathway of Sound Reception



Fiky

Lateral wall of Tympanic Cavity: medial (internal) view

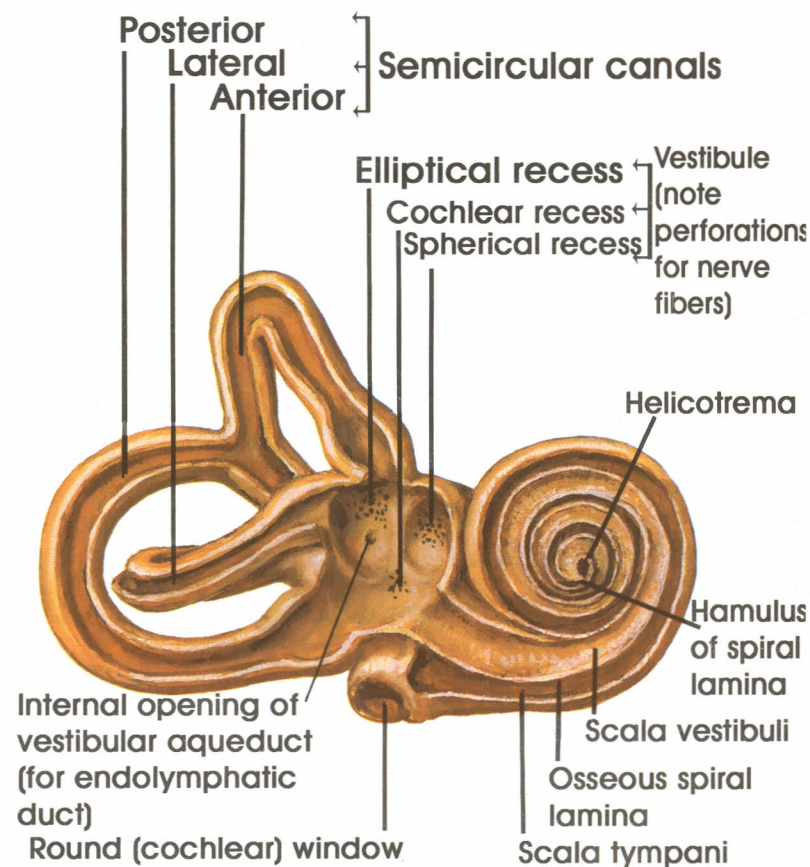
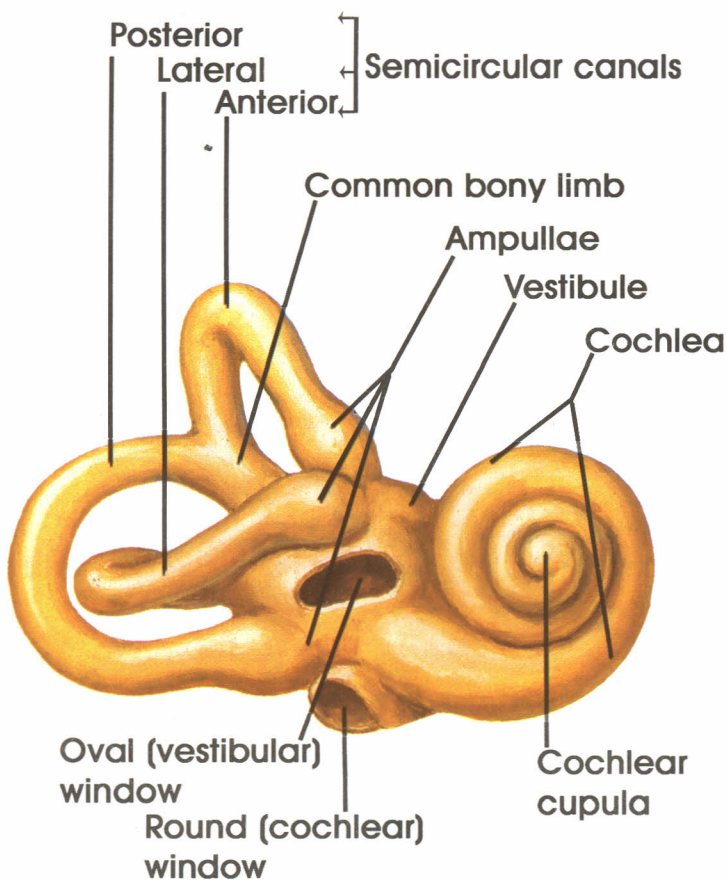


Medial wall of tympanic cavity: lateral view

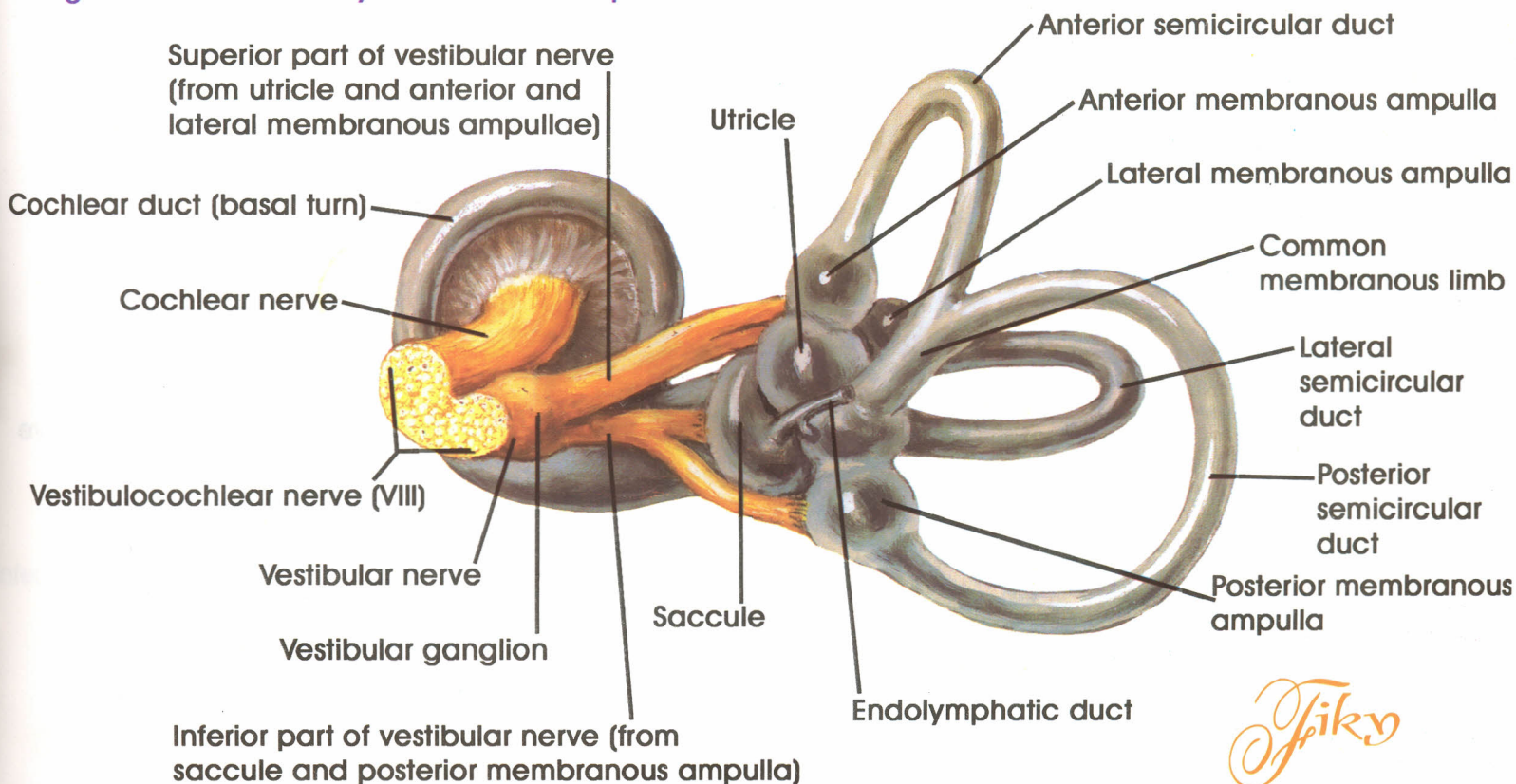
Tympanic Cavity

Right bony labyrinth (otic capsule), anterolateral view: surrounding cancellous bone removed

Dissected right bony labyrinth (otic capsule): membranous labyrinth removed



Right membranous labyrinth with nerves: posteromedial view



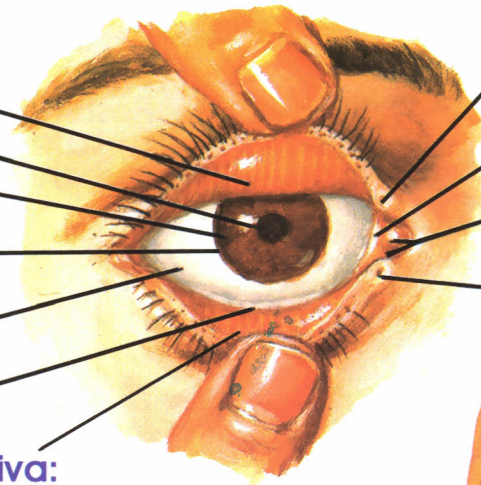
Jiky

Bony and Membranous Labyrinths

Superior palpebral conjunctiva:

tarsal (meibomian) glands shining through

Seen through cornea
 Pupil
 iris
 Corneoscleral junction (corneal limbus)
 Bulbar conjunctiva over sclera
 Inferior conjunctival fornix

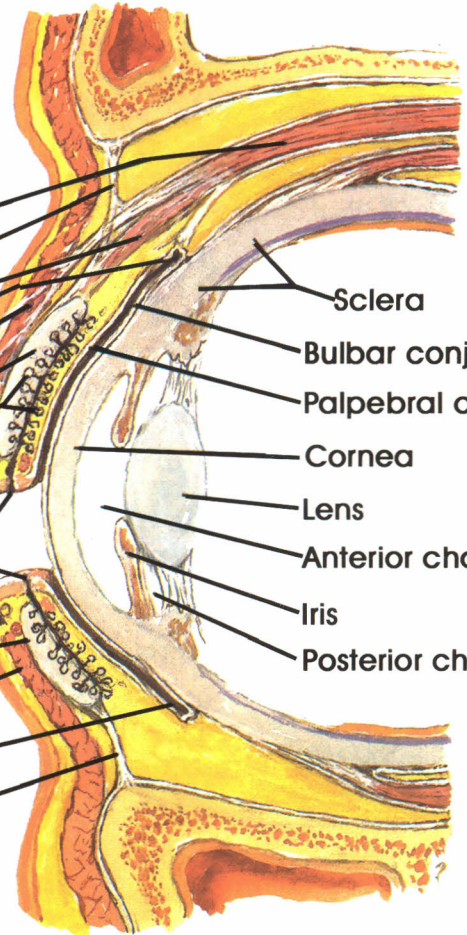


Superior lacrimal papilla and punctum
 Plica semilunaris
 Lacrimal caruncle in lacrimal lake (lacus lacrimalis)
 Inferior lacrimal papilla and punctum

Inferior palpebral conjunctiva:

tarsal glands shining through

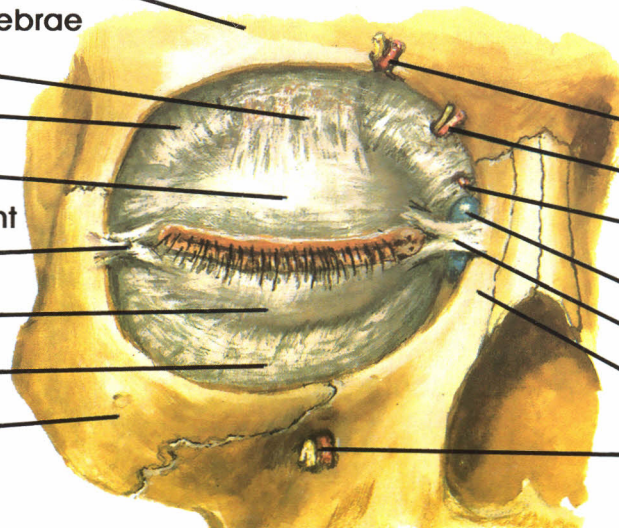
Levator palpebrae superioris muscle
 Orbital septum
 Superior tarsal (Muller's) muscle (smooth)
 Superior conjunctival fornix
 Orbicularis oculi muscle (palpebral part)
 Superior tarsus
 Tarsal (meibomian) glands
 Sebaceous glands
 Eyelashes (cilia)
 Openings of tarsal glands
 Inferior tarsus
 Orbicularis oculi muscle (palpebral part)
 Inferior conjunctival fornix
 Orbital septum



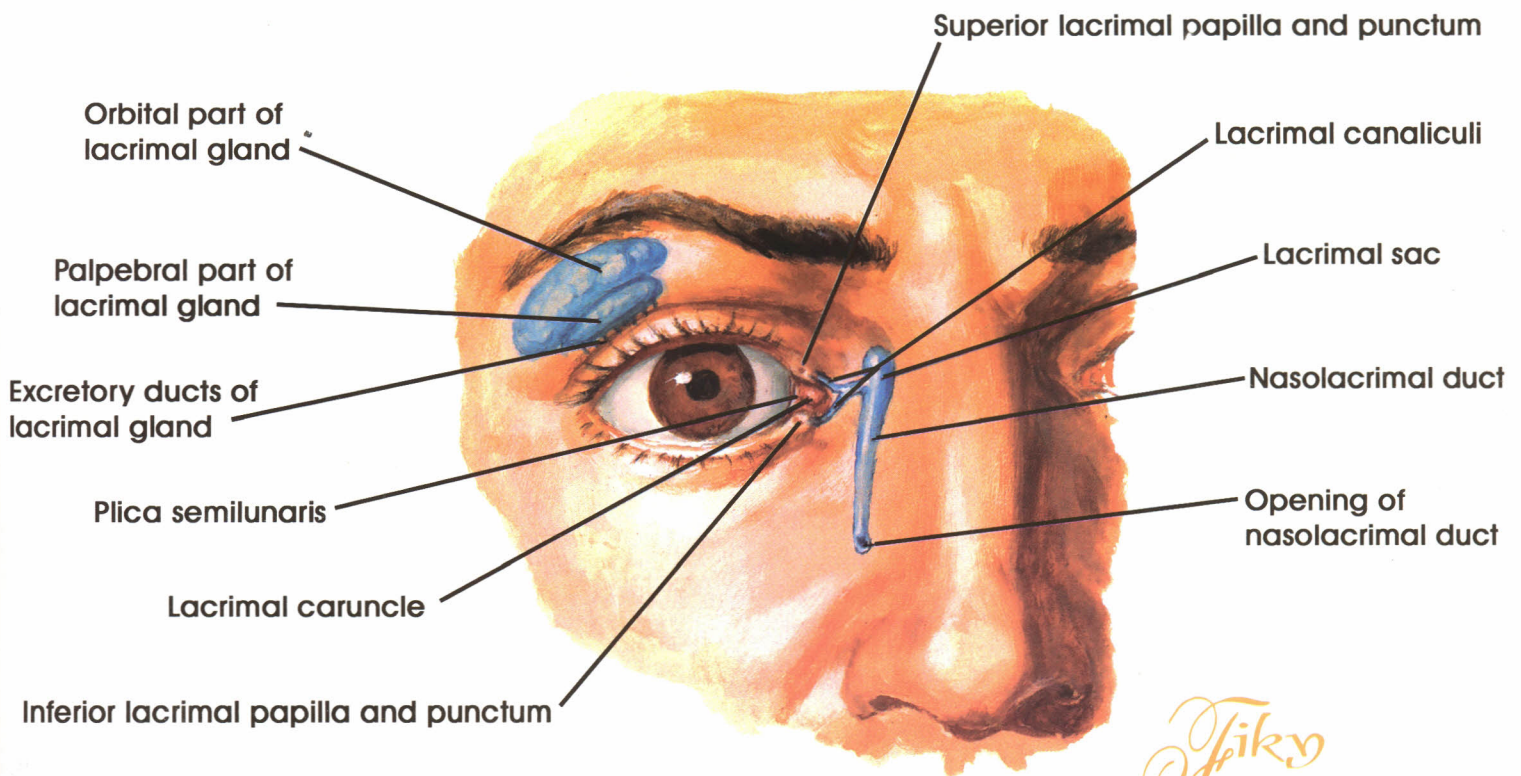
Sclera
 Bulbar conjunctiva
 Palpebral conjunctiva
 Cornea
 Lens
 Anterior chamber
 Iris
 Posterior chamber



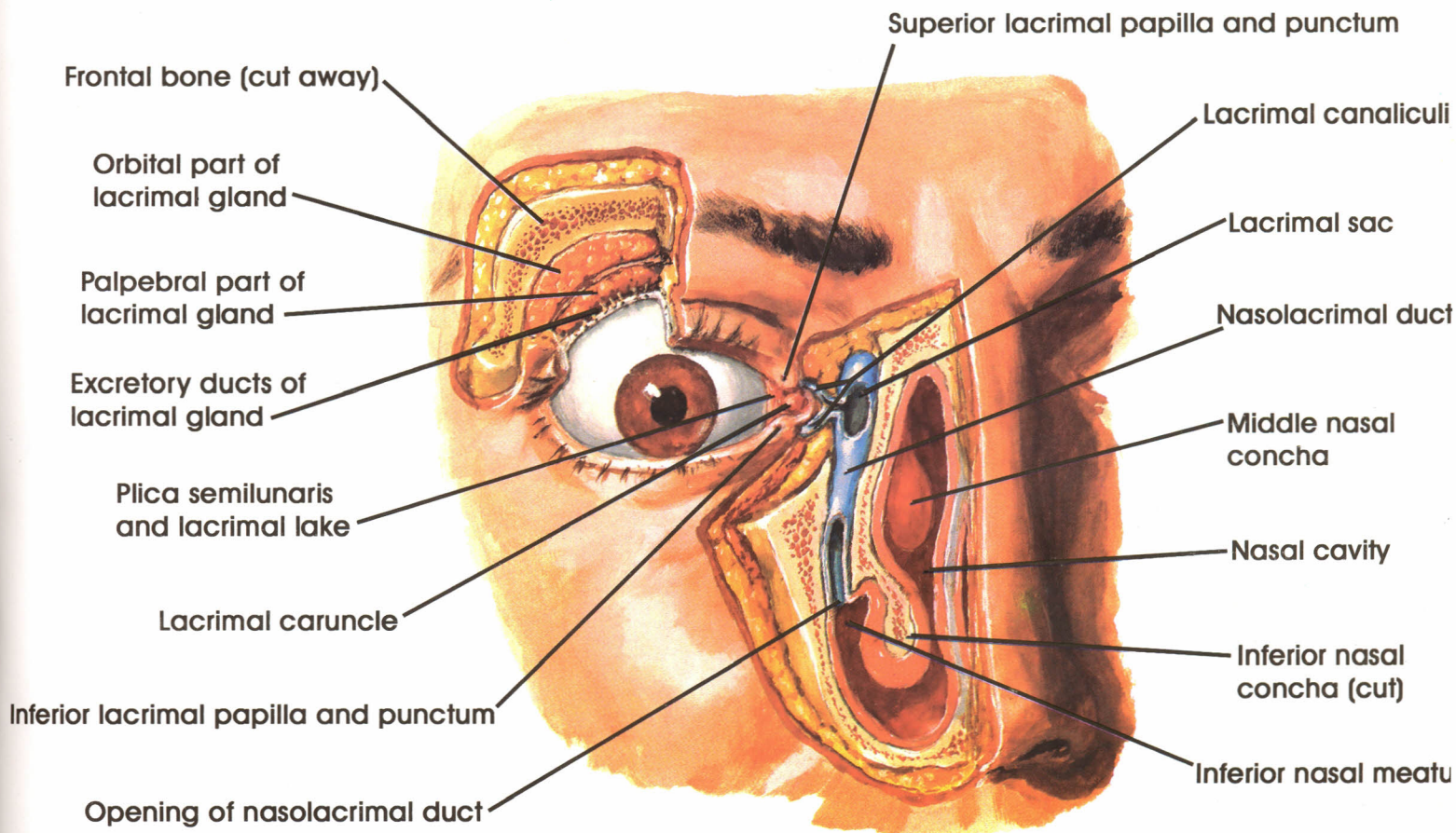
Frontal bone
 Insertion of levator palpebrae superioris muscle
 Orbital septum
 Superior tarsus
 Lateral palpebral ligament and overlying raphe
 Inferior tarsus
 Orbital septum
 Zygomatic bone



Supraorbital artery and nerve
 Supratrochlear artery and nerve
 Dorsal nasal artery and infratrochlear nerve
 Lacrimal sac
 Medial palpebral ligament
 Maxilla (frontal process)
 Infraorbital artery and nerve

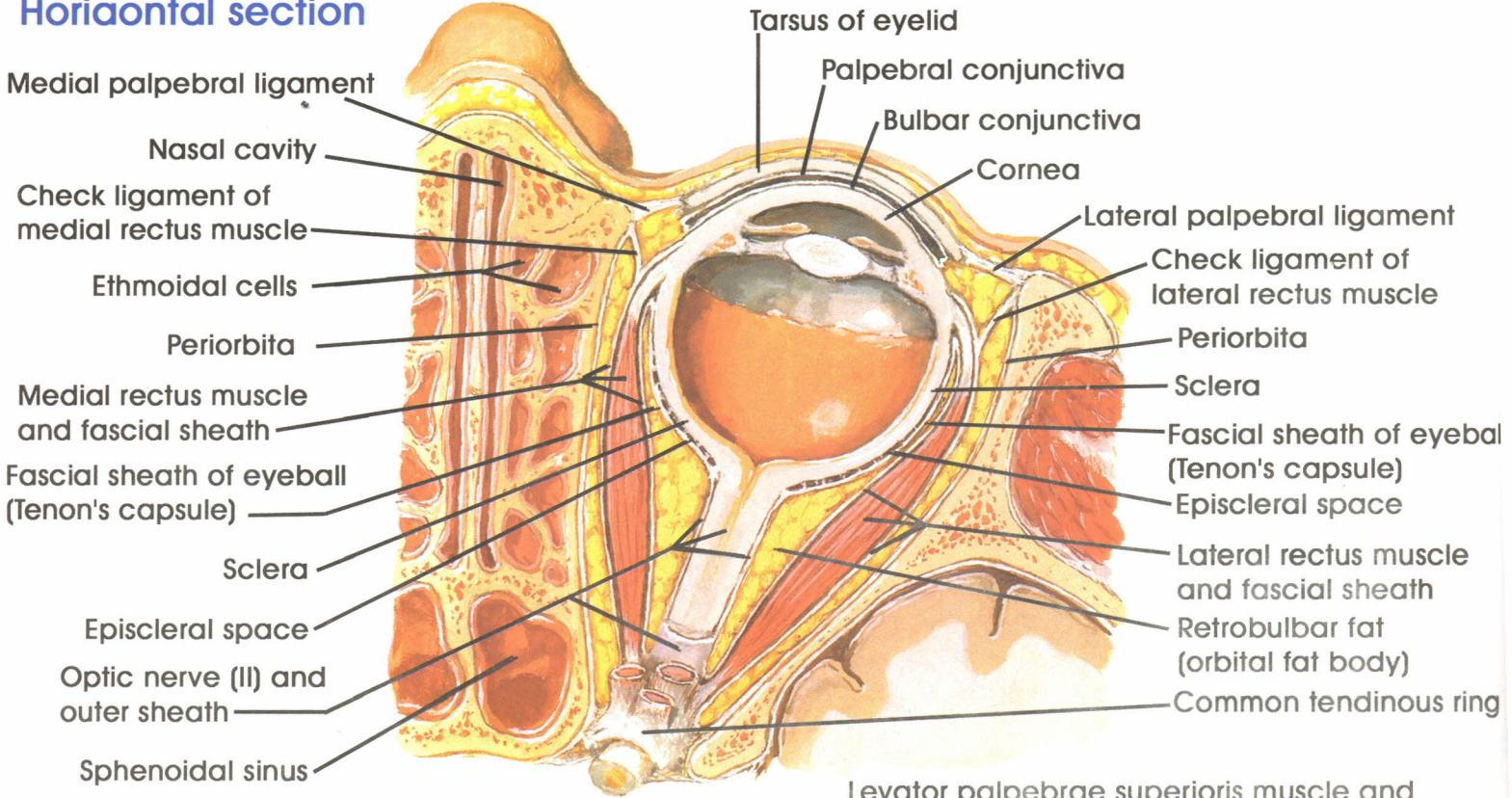


Fiky

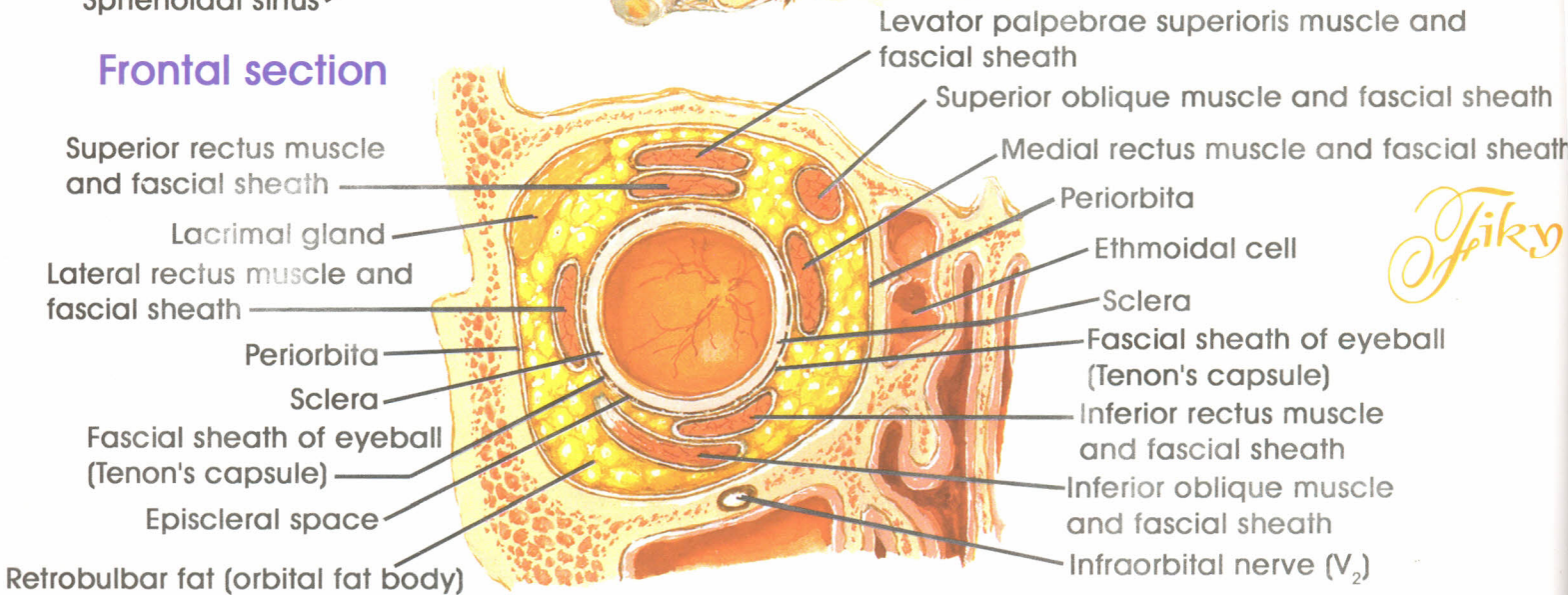


Lacrimal Apparatus

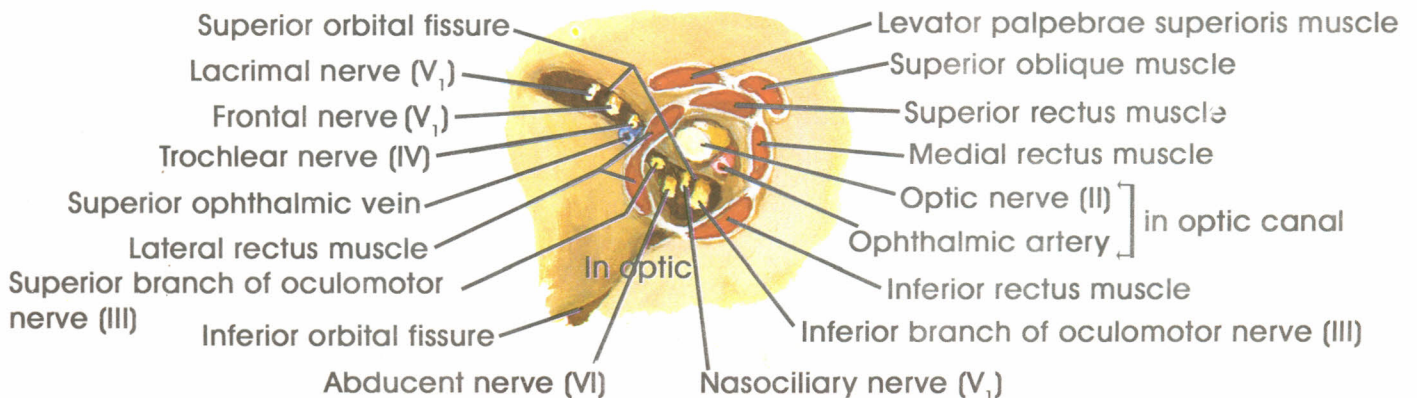
Horizontal section



Frontal section

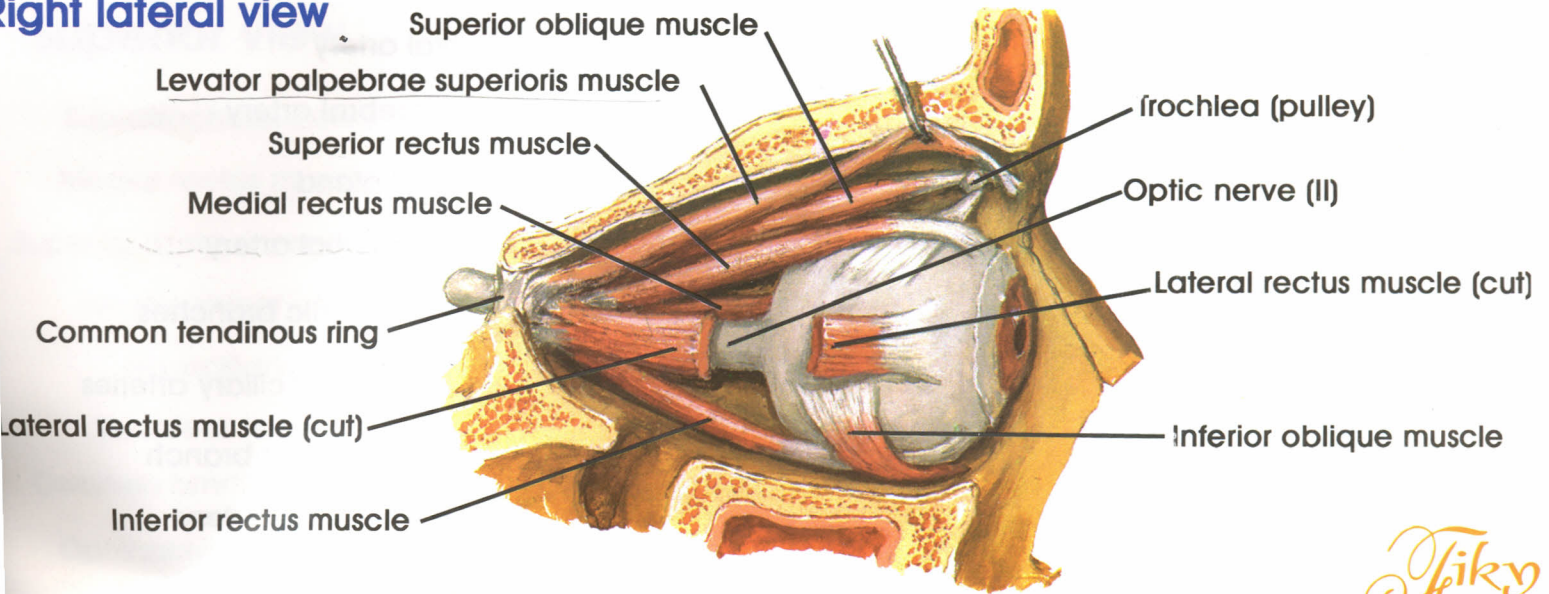


Muscle attachments, Nerves and Vessels entering Orbit



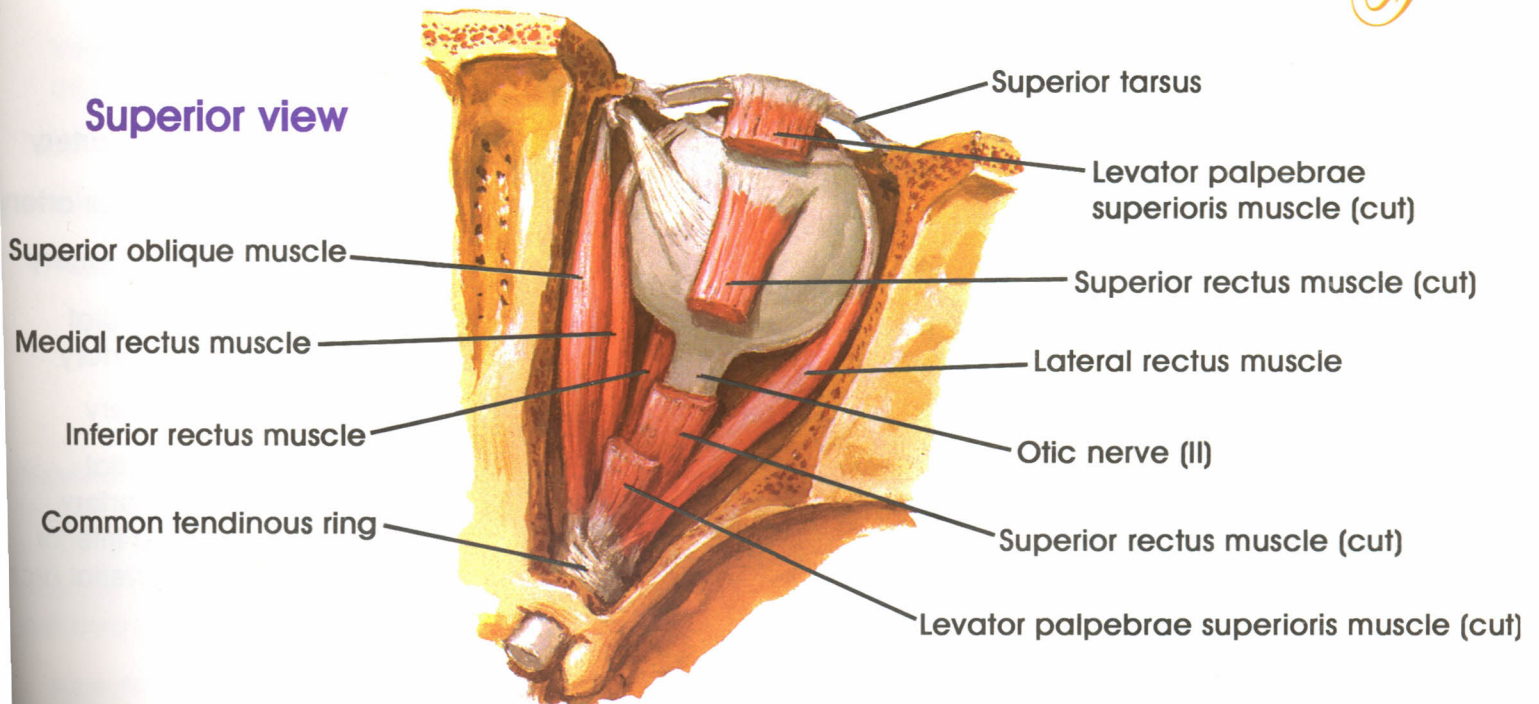
Fascia of Orbit and Eyeball

Right lateral view

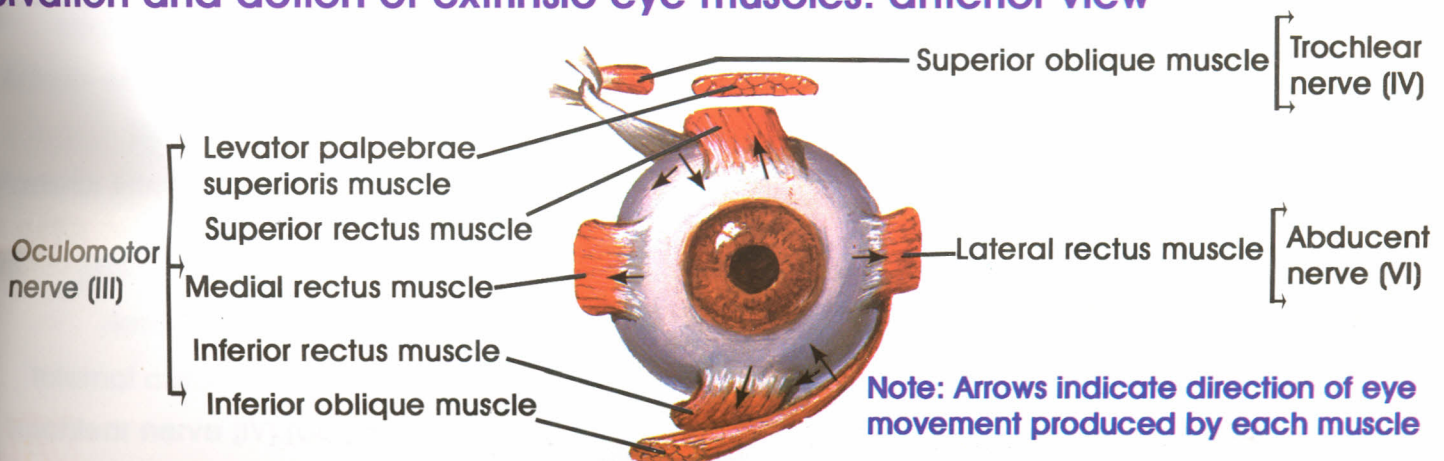


Spiky

Superior view



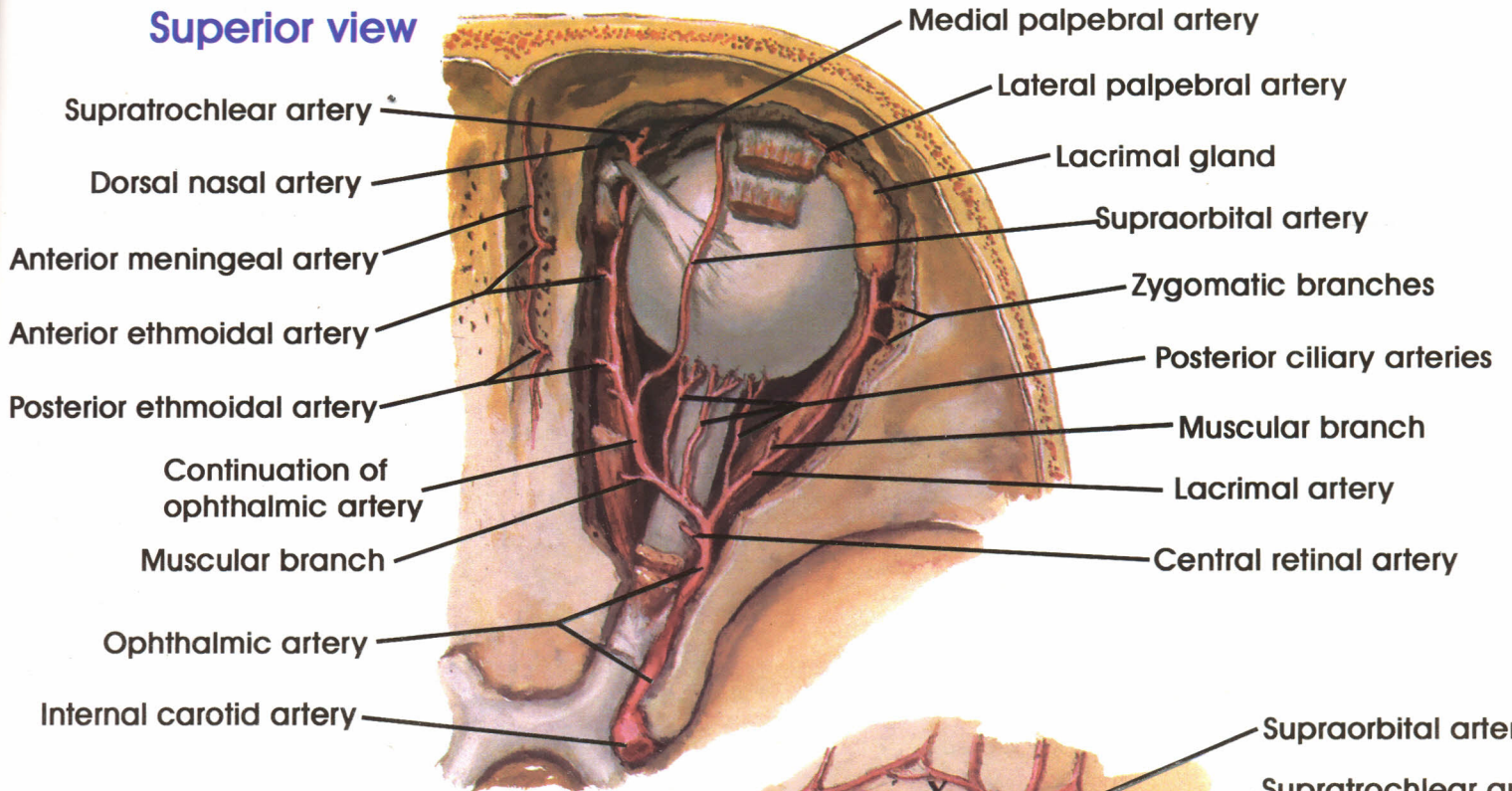
Innervation and action of extrinsic eye muscles: anterior view



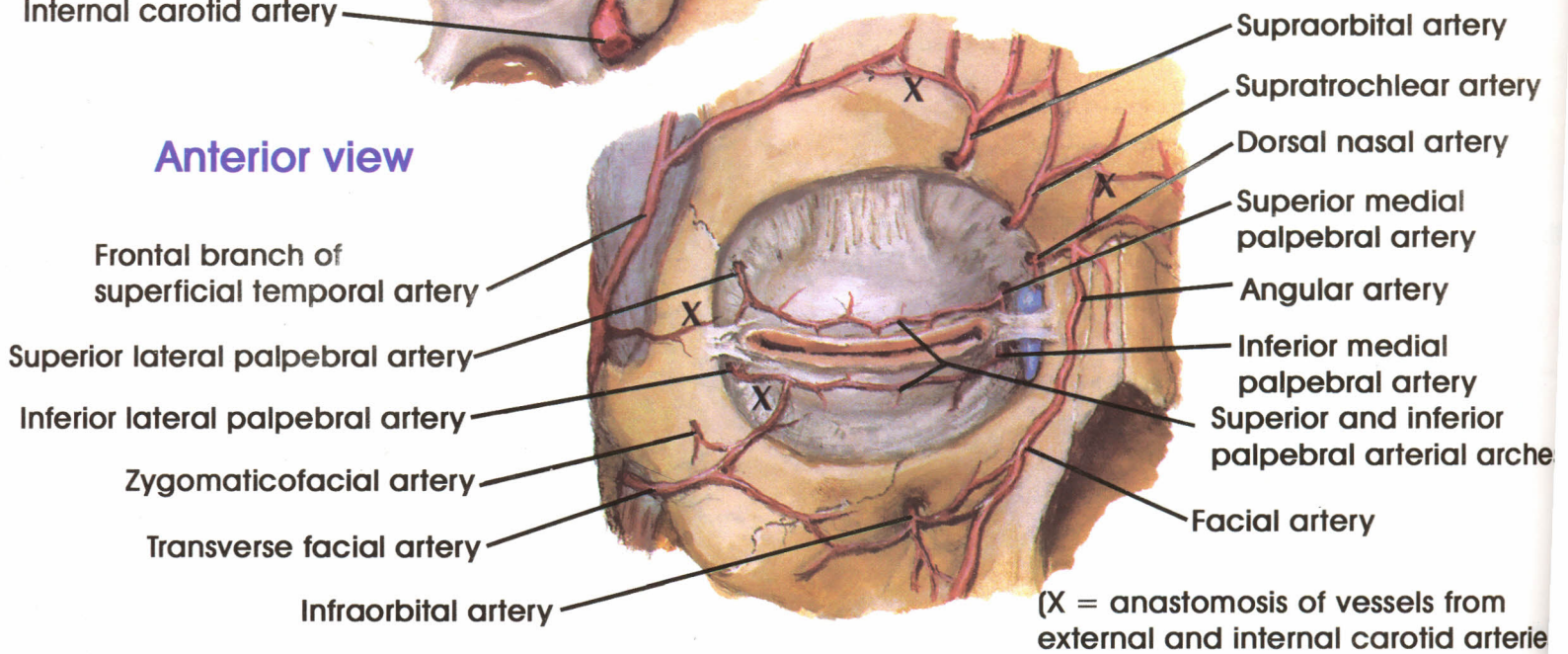
Extrinsic Eye Muscles



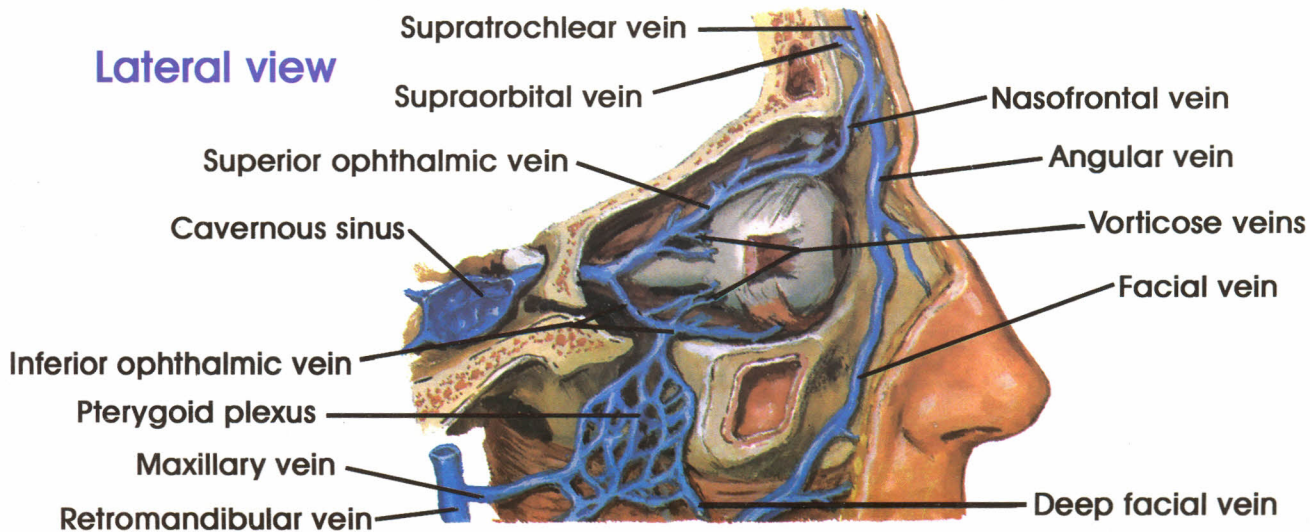
Superior view



Anterior view



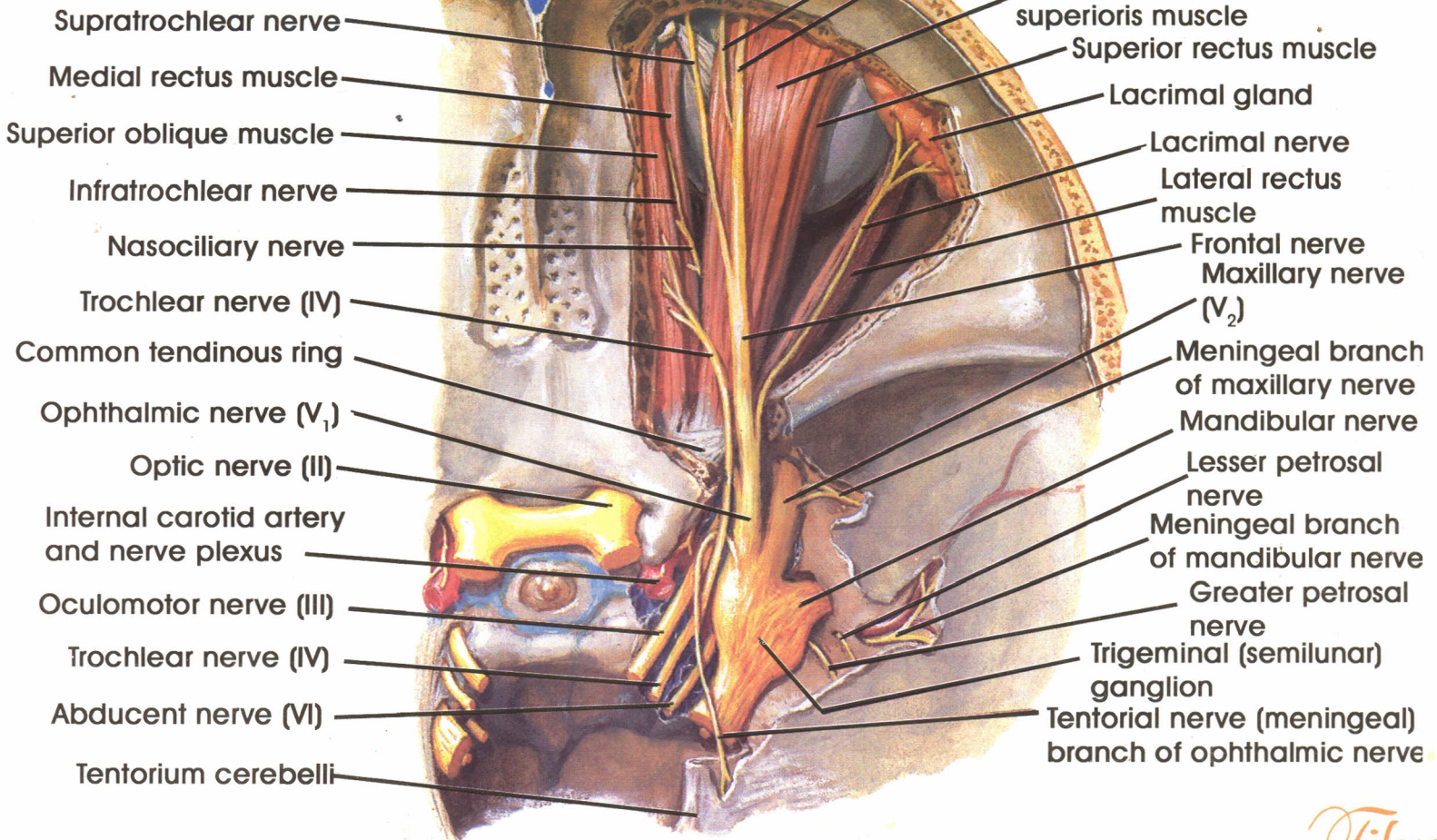
Lateral view



Arteries and Veins of Orbit and Eyelids

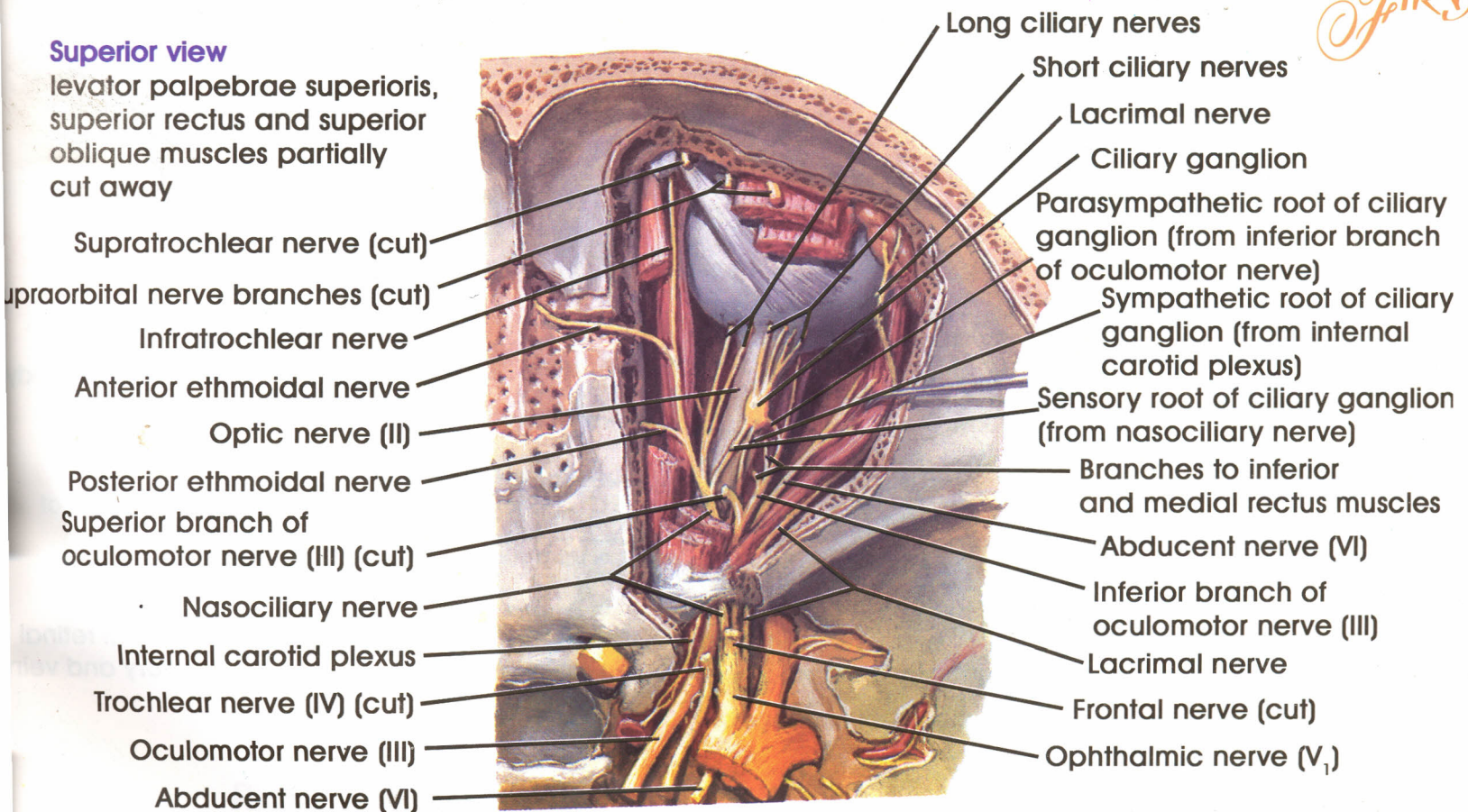


Superior view



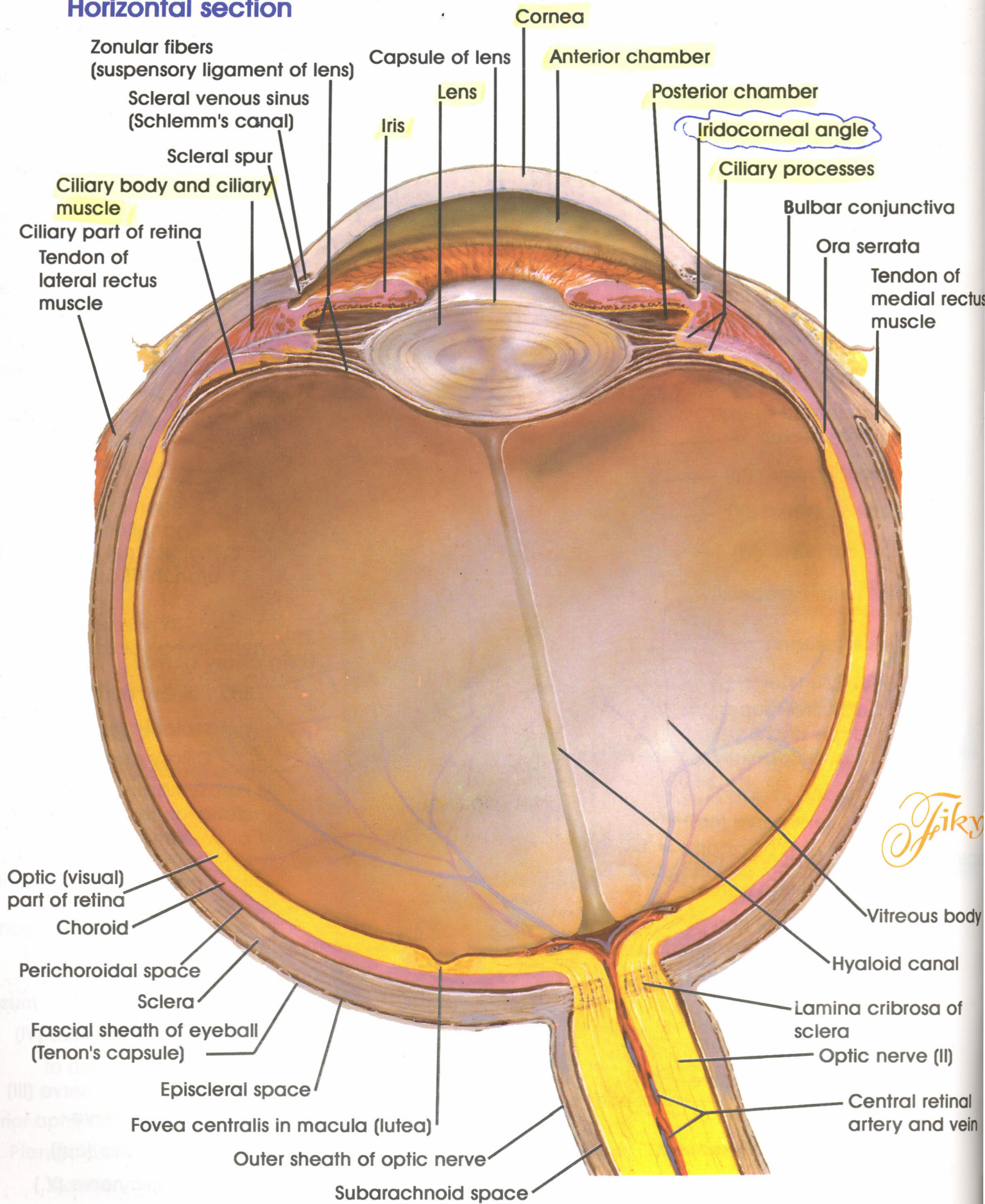
Superior view

levator palpebrae superioris, superior rectus and superior oblique muscles partially cut away

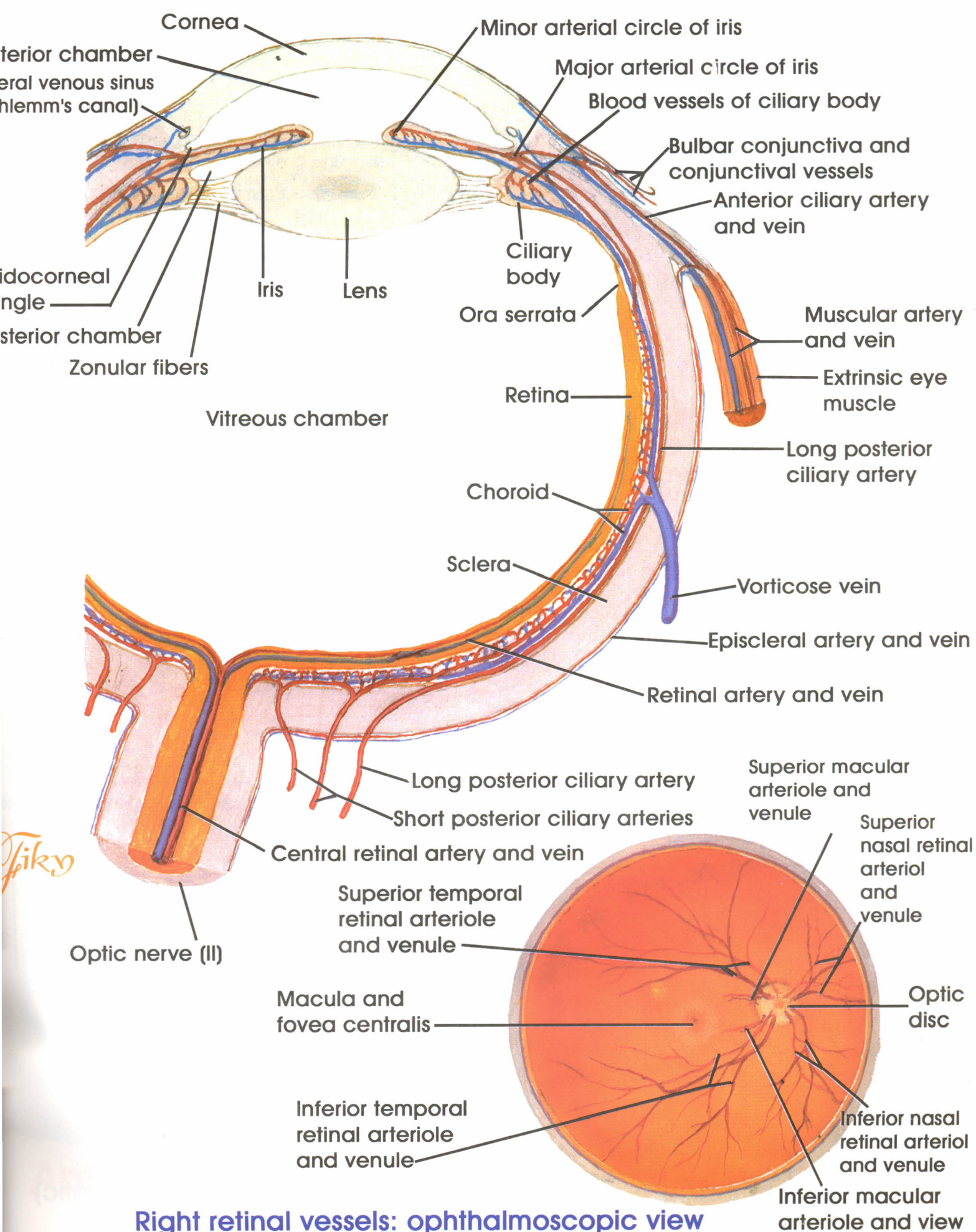


Nerves of Orbit

Horizontal section

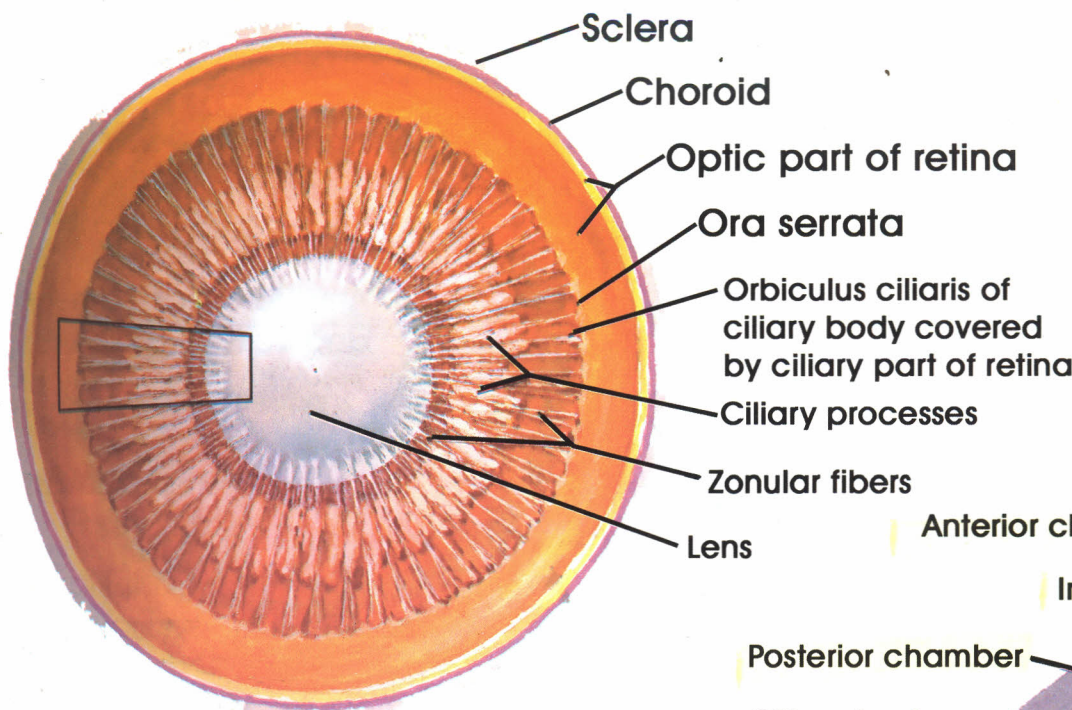


Eye ball

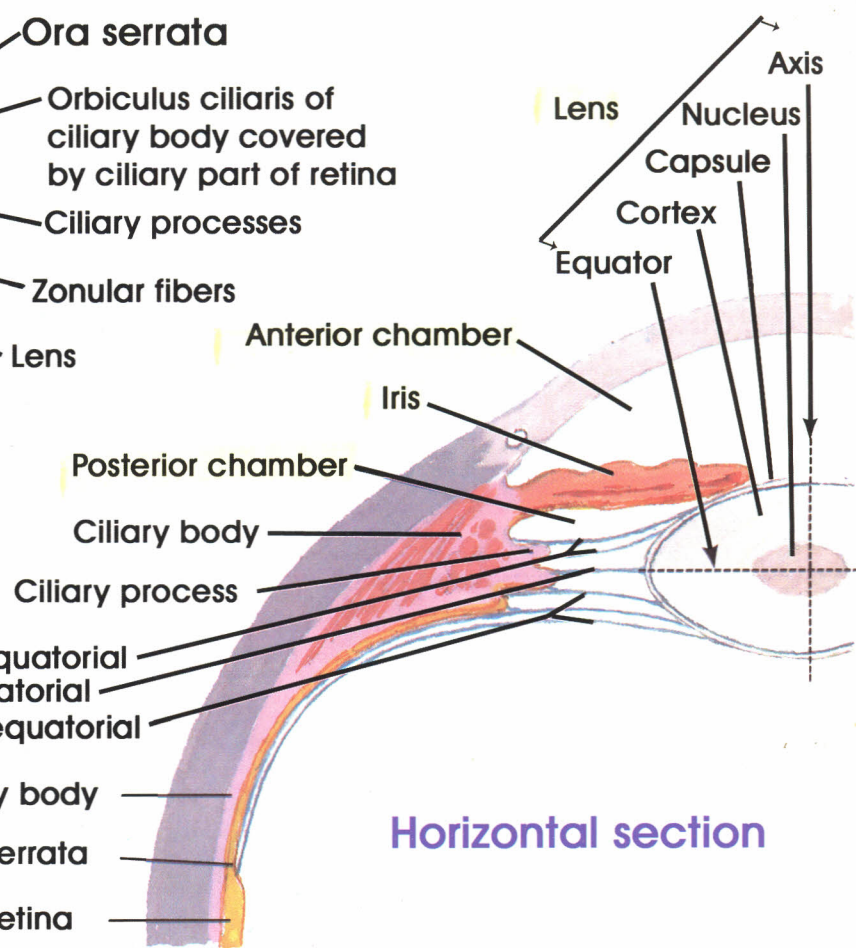


Right retinal vessels: ophthalmoscopic view

Intrinsic Arteries and Veins of Eye

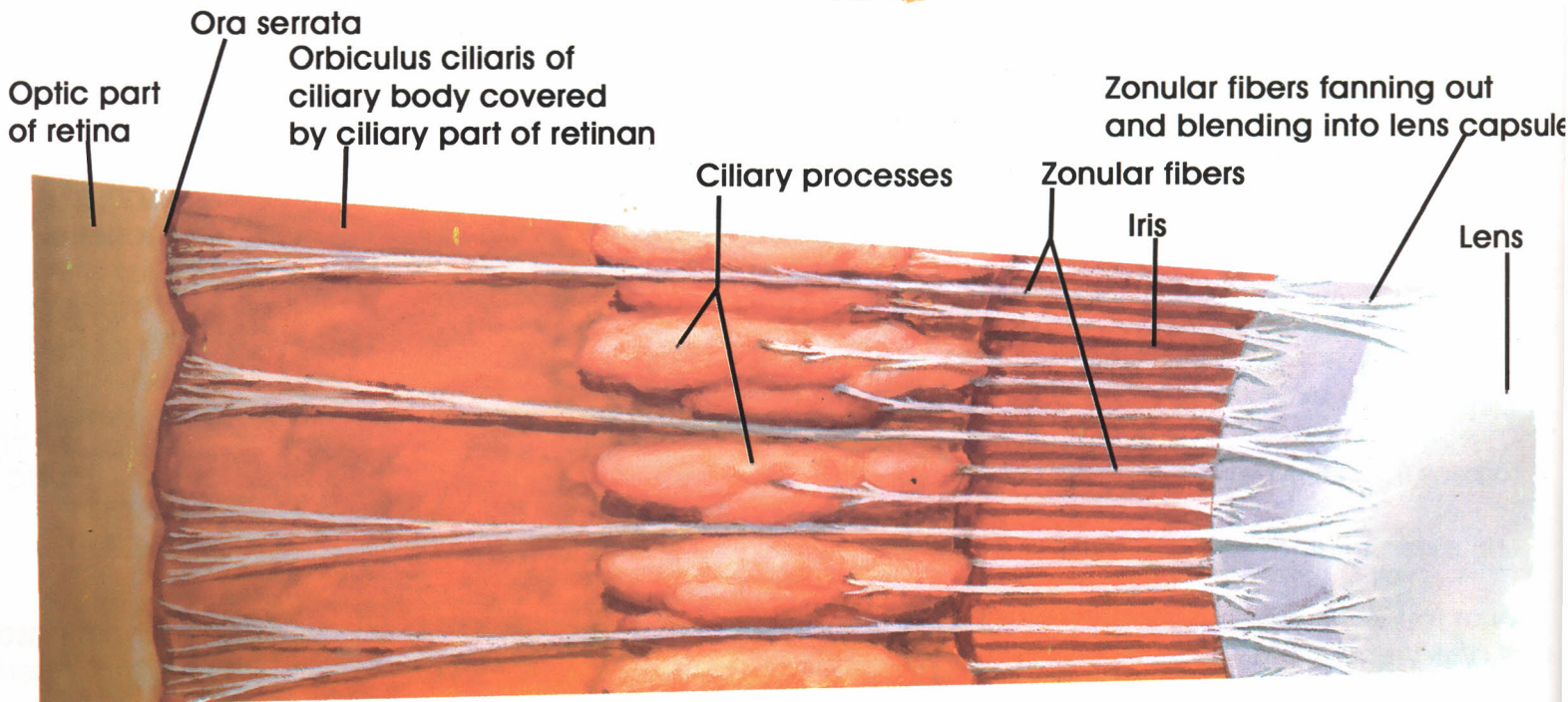


**Eyeball sectioned in frontal plane:
 anterior segment viewed from behind**



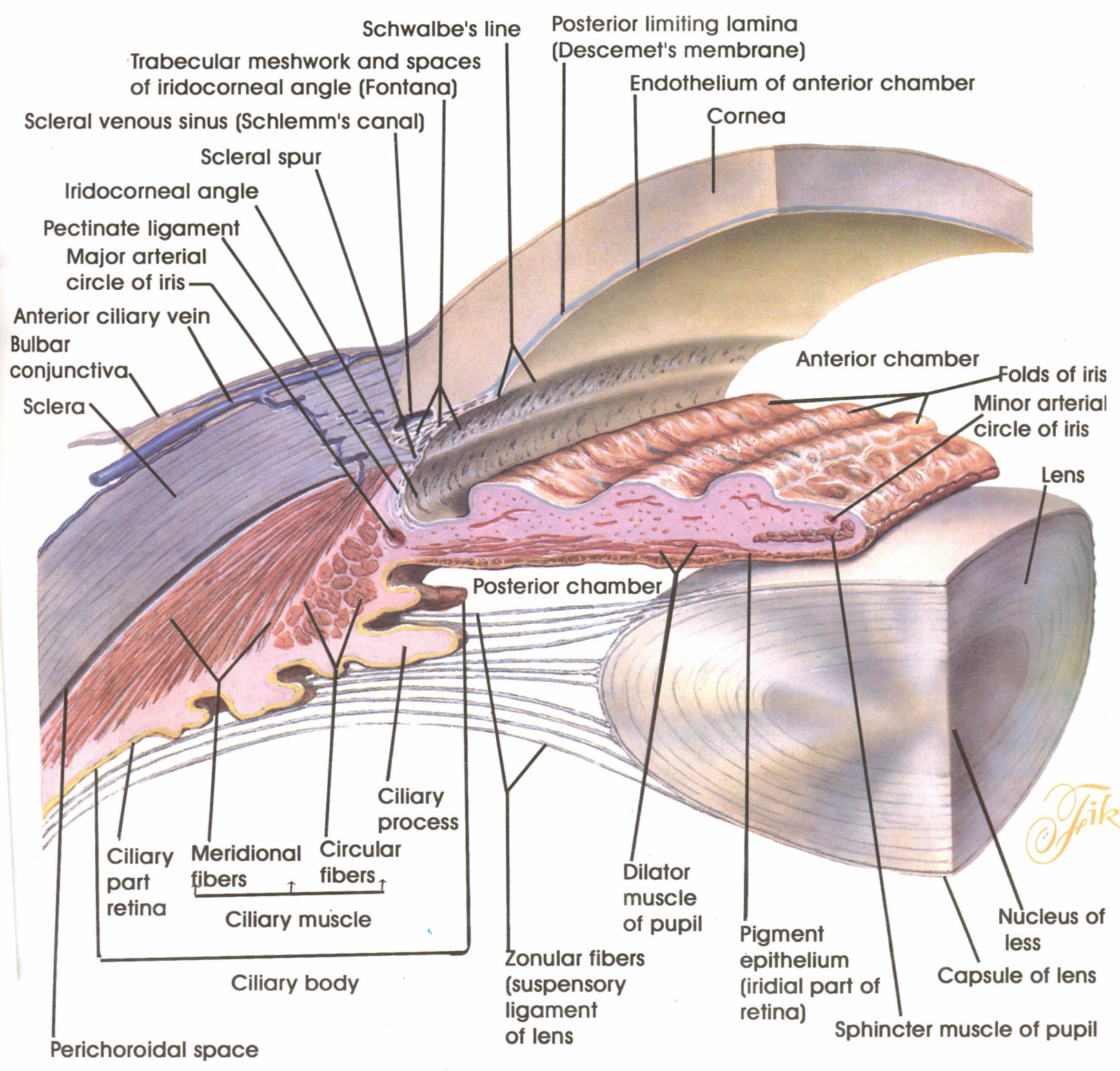
Horizontal section

Fiky



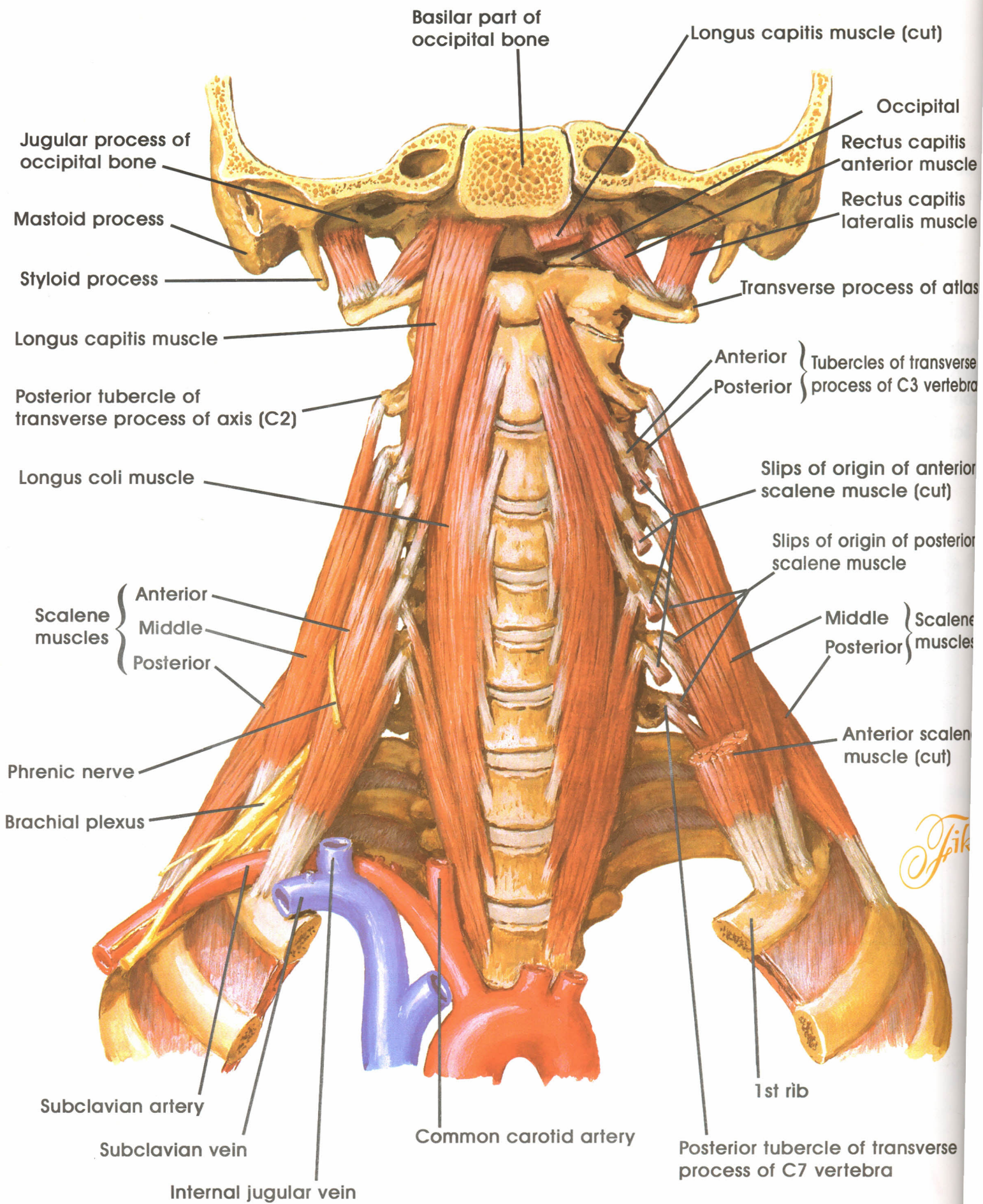
Enlargement of segment outlined in top illustration (semischematic)

Lens and Supporting Structures

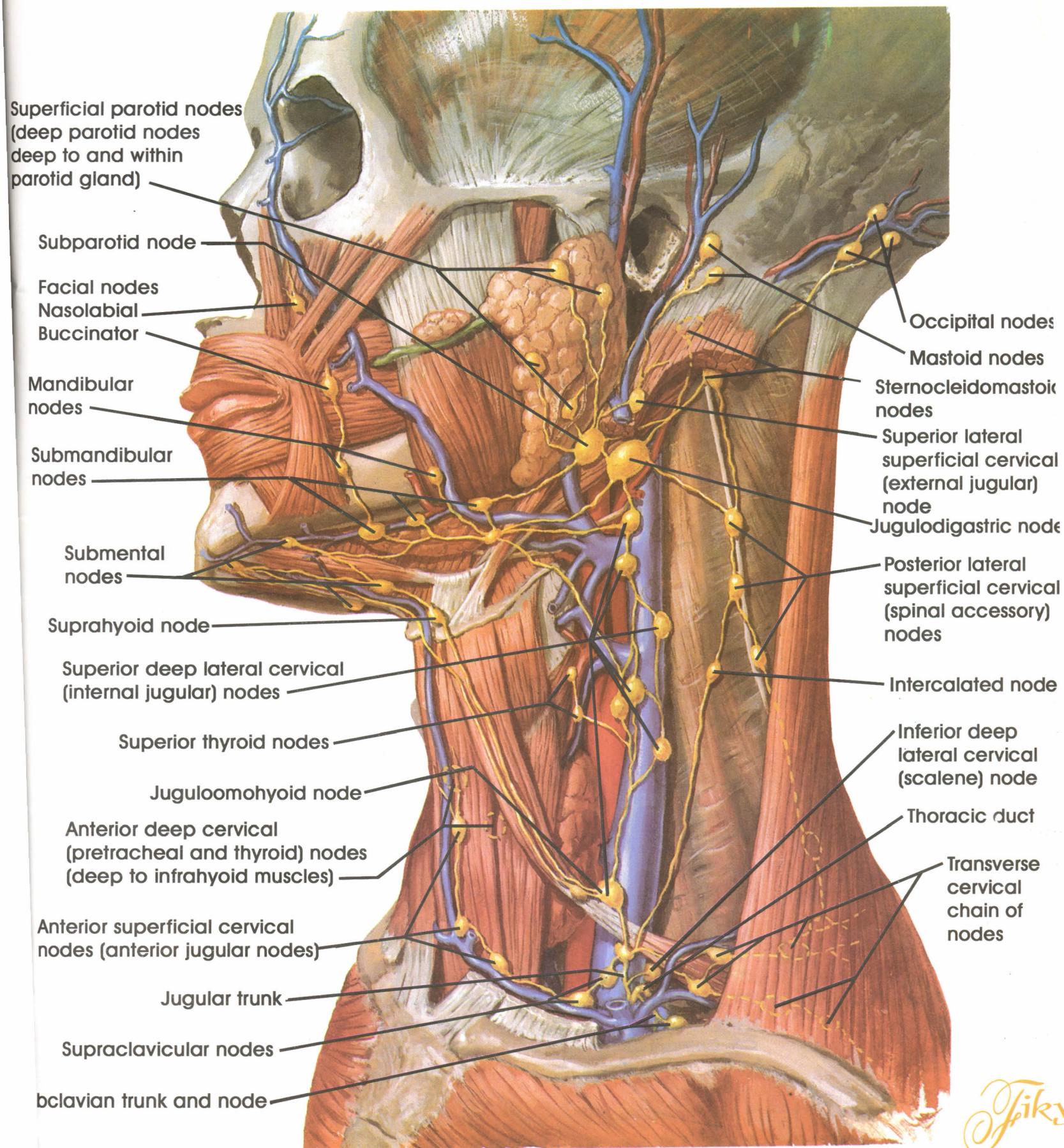


Note: For clarity, only single plane of zonular fibers shown; actually, fibers surround entire circumference of lens

Anterior and Posterior Chambers of Eye

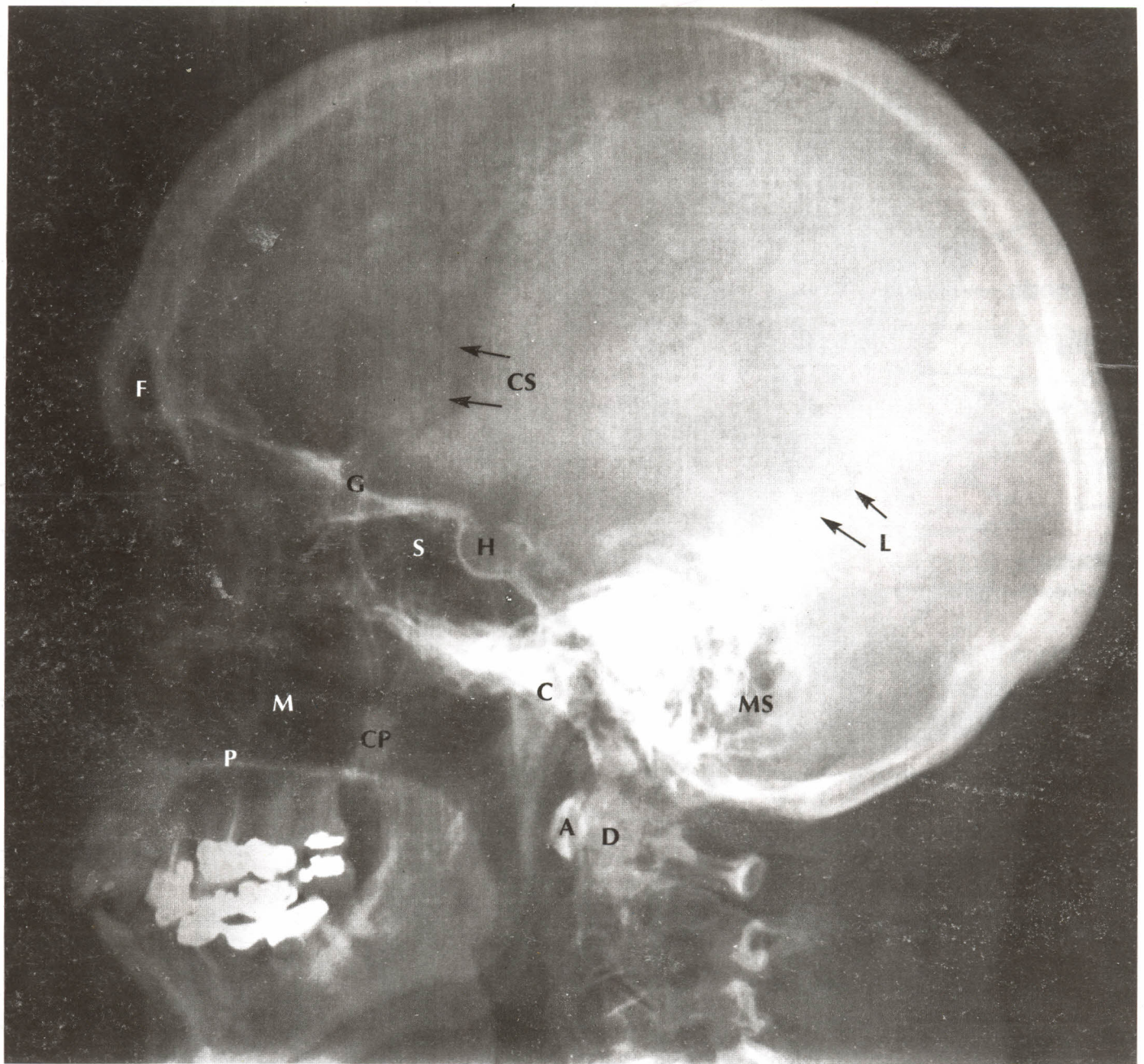


Scalene and Prevertebral Muscle



Fiky

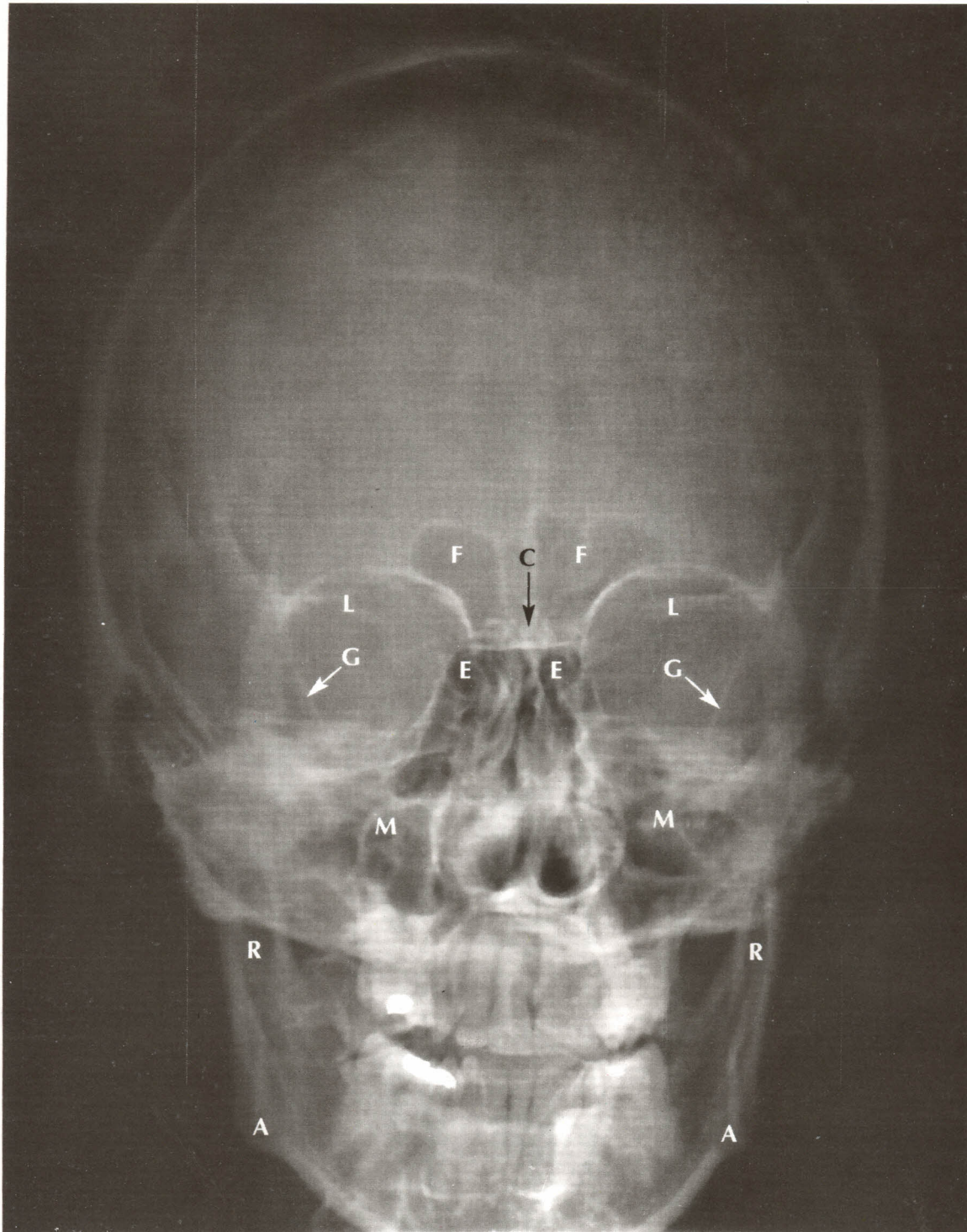
Lymph Vessels and Nodes of Head and Neck



- | | | | |
|----|--------------------------------------|----|-----------------------------|
| A | Anterior arch of atlas (C1 vertebra) | G | Greater wing of sphenoid |
| C | Condyle of mandible | H | Hypophyseal fossa |
| CP | Coronoid process of mandible | L | Lambdoid suture |
| C5 | Coronal suture | M | Maxillary sinus |
| D | Dens of axis (C2 vertebra) | MS | Mastoid air cells |
| F | Frontal sinus | P | Palatine process of maxilla |
| | | S | Sphenoid sinus |

Fiiky

Skull - Lateral Radiograph



- A Angle of mandible
- C Crista galli
- E Ethmoid sinus
- F Frontal sinus
- G Greater wing of sphenoid
- L Lesser wing of sphenoid
- M Maxillary sinus
- R Ramus of mandible

Skull - Anteroposterior Radiograph

Dr. Jikry